

# Meeting Report

## Twentieth Meeting of the Technical Advisory Group (TAG) on Immunization and Vaccine Preventable Diseases in the Western Pacific Region



Manila, Philippines  
9–12 August 2011

**REPORT**

**TWENTIETH MEETING OF THE TECHNICAL ADVISORY GROUP (TAG) ON  
IMMUNIZATION AND VACCINE PREVENTABLE DISEASES IN THE WESTERN  
PACIFIC REGION**

Manila, Philippines  
9-12 August 2011

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## NOTE

The views expressed in this report are those of the participants of the 20<sup>th</sup> Meeting of Technical Advisory Group (TAG) on Immunization and Vaccine Preventable Diseases in the Western Pacific Region do not necessarily reflect the policies of the Organization.

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### Keywords:

Immunization programmes/ vaccines/measles-prevention and control/rubella-prevention and control/encephalitis, Japanese-prevention and control/hepatitis b prevention and control/tetanus-prevention and control

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## LIST OF ABBREVIATIONS

|        |   |
|--------|---|
| AEFI   | Adverse events following immunization           |
| AFP    | Acute flaccid paralysis                         |
| ANC    | Antenatal care                                  |
| AusAID | Australian Agency for International Development |
| CBAW   | Child bearing age women                         |
| CRS    | Congenital rubella syndrome                     |
| DoV    | Decade of Vaccine                               |
| DTP    | Diphtheria-tetanus-pertusis                     |
| EPI    | Expanded Programme on Immunization              |
| ERP    | Expert resource panel                           |
| FDA    | Food and drug administration                    |
| GAVI   | Global Alliance for Vaccines and Immunisation   |
| GIVS   | Global Immunization Vision Strategy             |
| GTZ    | German Agency for International Cooperation     |
| GVAP   | Global Vaccine Action Plan                      |
| HIB    | Haemophilus influenzae type B                   |
| HPV    | Human papillomavirus                            |
| HSFP   | Health System Funding Platform                  |
| IBD    | Invasive bacterial disease                      |
| ICC    | Interagency Coordinating Committee              |
| IgM    | Immunoglobuline M                               |
| IMB    | Independent Monitoring Board                    |
| IMCI   | Integrated management of childhood illness      |
| IPD    | Inpatient department                            |
| IPV    | Inactivated poliovirus vaccine                  |
| JE     | Japanese encephalitis                           |
| JICA   | Japan International Cooperation Agency          |
| JRF    | WHO UNICEF Joint Reporting Form                 |
| LB     | Live birth                                      |
| MCH    | Mother and child health                         |
| MCV1   | First dose of measles containing vaccine        |
| MCV2   | Second dose of measles containing vaccine       |

|        |   |
|--------|---|
| MDG    | Millenium Development Goal                            |
| MMR    | Maternal mortality rate                               |
| MNCH   | Maternal Newborn and Child Health                     |
| MNTE   | Maternal and neonatal tetanus elimination             |
| MR     | Measles rubella vaccine                               |
| NCIP   | National child immunization programme                 |
| NIAID  | National Institute of Allergy and Infectious Diseases |
| NID    | National immunization day                             |
| NIP    | National Immunization Programme                       |
| NITAG  | National Immunization Technical Advisory Group        |
| NRA    | National regulatory authority                         |
| NT     | Neonatal tetanus                                      |
| OPD    | Out patient department                                |
| OPV    | Oral poliovirus vaccine                               |
| ORI    | Outbreak response immunization                        |
| PCV    | Pneumococcal Conjugate Vaccine                        |
| RCC    | Regional Certification Commission                     |
| RCV    | Rubella containing vaccine                            |
| REC    | Reaching every child                                  |
| RED    | Reaching every district                               |
| RVC    | Regional Verification Commission                      |
| SAGE   | Strategic Advisory Group of Experts                   |
| SBA    | Skilled birth attendance                              |
| SIA    | Supplementary immunization activities                 |
| TGA    | Therapeutic Goods Administration                      |
| TT     | Tetanus toxoid  |
| UN     | United Nations  |
| UNICEF | United Nations Children's Fund                        |
| VPD    | Vaccine preventable diseases                          |
| WHA    | World Health Assembly                                 |
| WPV1   | Wild poliovirus type 1                                |
| WPV3   | Wild poliovirus type 3                                |

## SUMMARY

The Western Pacific Region entered the second decade of the 21st century with continued regional progress towards achieving immunization goals, including strengthening immunization systems, achieving measles elimination and the hepatitis B control milestone by 2012, completing maternal and neonatal tetanus elimination, maintaining poliomyelitis-free status and accelerating introduction of new and underutilized vaccines.

Major global immunization goals and targets can be accomplished by successfully reaching them. There is great utility in establishing and monitoring such regional goals to focus attention on major immunization priorities, the technical and programmatic requirements to address these priorities and the human and financial resource mobilization required. However, achievement of current regional goals and targets is facing critical challenges in several countries.

The Technical Advisory Group (TAG) meeting is an opportunity to review Regional and country progress. Countries can learn from each other's experiences and challenges. The TAG develops and can share advice with countries and the Western Pacific Regional Office on recommended actions to improve programme performance and enhance progress towards achieving regional goals and targets. The ultimate goal of this process is to protect more children and adults against vaccine preventable disease, disability and death.

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ANNEX 1 - TIMETABLE

ANNEX 2 - LIST OF PARTICIPANTS

## 1. INTRODUCTION

The 20th Meeting of the Technical Advisory Group (TAG) on Immunization and Vaccine Preventable Diseases in the Western Pacific Region was held in Manila, Philippines from 9 to 12 August 2011.

### 1.1 Objectives

- (1) to review the current status of immunization strategies of countries in the Region for achieving the goals and targets set for measles elimination, hepatitis B (hepB) control, maintaining poliomyelitis-free status and maternal and neonatal tetanus elimination (MNTE);
- (2) to specify critical challenges with and propose concrete and practical solutions for immunization strategies of countries in the Region for achieving the goals and targets set;
- (3) to review progress, specify issues and propose solutions on other programme components critical for achieving the goals and targets set, which include vaccine preventable disease (VPD) surveillance, laboratory networks, certification, verification and validation processes, partnerships and resource mobilization; and
- (4) to review progress, discuss plans, specify critical issues and propose ways forward on the introduction of new vaccines and technologies in the Region.

Attending the meeting were seven TAG members, two temporary advisers, 21 participants from 16 countries and areas, 31 representatives from 20 partner agencies, six representatives from WHO Collaborating Centres and 26 WHO staff from Headquarters, the Western Pacific Regional Office and Country Offices. The timetable of the meeting is provided in Annex 1. The list of the participants is included in Annex 2.

### 1.2 Opening remarks

Dr Shin Young-soo, Regional Director, Western Pacific Regional Office, welcomed the TAG members, participants and partners. He emphasized how, during two decades, the TAG has provided sound technical advice on all aspects of the immunization programmes. It has provided guidance towards new goals and targets and pressed for coordination among all concerned with immunization to sustain gains achieved.

Dr Shin noted that the tireless efforts of the TAG were matched by the work of national immunization programmes (NIPs) and the support of its key partners. The result is an impressive list of achievements in VPD control; the Western Pacific remains poliomyelitis-free, countries in the Region continue to make extraordinary efforts to eliminate measles by 2012 and rubella control is improving.

Success in hepB control is also impressive. Before vaccination, over 8% of children in most countries suffered chronic hepB infection. Today, 27 countries have likely reduced these rates to less than 2%. Protection against maternal and neonatal tetanus is increasing in the countries concerned, fostered by closer collaboration between the Expanded Programme on Immunization (EPI) and mother and child health (MCH) programmes. Vaccines against

pneumonia and diarrhoea promise to further reduce child mortality in the Region and therefore contribute to achieving Millennium Development Goal (MDG) 4.

Dr Shin said that the first regional Vaccination Week in April 2011 celebrated the achievements of immunization programmes in promoting healthy communities throughout the Region.

He also emphasized that with the achievements made to date, it has established the foundation for sustained change to improve the efficiency, equity and effectiveness of immunization — and ultimately of health systems.

Dr Shin mentioned that to move into the next decade, the remaining challenges need to be understood. The analysis is to be conducted in an evidence-based way and work with the Member States in a realistic and consensus-building fashion.

He said that strengthening immunization systems remains at the core of EPI disease control efforts. The current main regional goals of measles elimination, hepB control and maintaining poliomyelitis-free status were established with this broader objective in mind.

Dr Shin noted that the 20th TAG meeting was supposed to look very closely at immunization data. Although the data may not always be complete and reliable, there is little doubt that VPDs are clustered primarily among the poor and disadvantaged.

Dr Shin observed too that immunization programmes are not reaching those people nearly as well as they are reaching the better-off. Therefore, he suggested that realistic recommendations were needed from the 20th TAG meeting on how to help the poor and the disadvantaged. This way, inequities in health service use can be alleviated and contributions made to reduce the differences in health status. This also will provide the necessary impetus to further advance specific VPD control goals.

He thanked and took the opportunity to introduce the new EPI Team Leader, Dr Sergey Diorditsa. He assured every one of Dr Diorditsa's dedication and how his extensive professional expertise in immunization and vast experience in disease control will support successfully moving EPI into the next decade.

Dr Shin concluded by thanking every one for their commitment in making EPI a vibrant and productive programme in the Western Pacific Region. He said that there are too many partners, donors and good friends to thank everybody personally, but he acknowledged the support of all in helping to protect so many children in this Region from VPDs and other ailments.

## 2. PROCEEDINGS

### 2.1 Immunization strategies

#### 2.1.1 Global overview: potential impact of the global immunization initiatives on regional and national immunization programmes

### *Global Polio Eradication Initiative*

Dr Sigrun Roesel, Medical Officer- EPI/Western Pacific Regional Office, summarized the global poliomyelitis situation. At the end of July 2011, there had been 286 cases globally (250 wild poliovirus (WPV) type 1 - WPV1 and 36 wild poliovirus type 3 - WPV3), compared with 576 cases at the same time in 2010 (515 WPV1 and 61 WPV3). India, Gabon and Niger had all gone six months without reporting a case.

The figure in 2010 included the 457 cases of the large outbreak in Tajikistan, in which the last cases had onset of paralysis on 4 July 2010. Following its quarterly meeting in London from 30 June to 1 July, the Independent Monitoring Board (IMB) issued a report which concluded that eradication still would be possible in the near term, but only if several important changes are made.

The report expressed particular concern over the poliomyelitis eradication programmes of the “re-established transmission” countries -- Angola, Chad and the Democratic Republic of Congo. The IMB called the continuing global funding gap (US\$ 590 million for 2011–2012) “deadly serious”, arguing that it is “neither right nor sustainable” that the burden of financing should rest disproportionately on a narrow funding base of core donors.

### *Regional and global measles elimination initiatives*

Dr Peter Strebel, Medical Officer-EPI/WHO Headquarters, reported on progress with measles mortality reduction globally, regional elimination and global eradication initiatives and the WHO position on rubella vaccine. From 1980 to 2001, the number of reported measles cases decreased by 93% globally. Five of six WHO regions have measles elimination goals and two have rubella elimination goals.

The 2011 World Health Assembly concluded that measles can and should be eradicated. Progress is being made towards achievement of 2015 global measles targets ( $\geq 90\%$  coverage with the first dose of measles containing vaccine [MCV1] at the national level and 80% by district,  $< 5$  measles cases per million and 95% reduction of measles mortality compared with 2000).

From 2000 to 2010, global MCV1 coverage increased from 72% to 85%, reported measles cases decreased by 65% and measles deaths decreased by 74% (to 2009). However, MCV1 coverage remains  $< 90\%$  in 67 countries and large measles outbreaks are recurring in the African Region. The American, European and Eastern Mediterranean Regions have formed regional verification commissions and finalized verification guidelines for measles elimination.

### *Maternal and neonatal tetanus elimination (MNTE): The new equity framework*

Dr Rowan Khan, Senior Health Specialist for MNTE at United Nation's Children's Fund (UNICEF) Headquarters, emphasized how immunization is at the forefront of a refocus on equity because it is a highly cost-effective way of preventing diseases that kill the poorest children and has a proven track record of reaching the most disadvantaged. But it also has the potential to achieve the ideal of universal coverage in which all sections of society directly benefit.

Although efforts over the past decade have greatly reduced worldwide child mortality, improvements in neonatal survival were less impressive. Neonatal mortality seems to account for over 50% of all infant mortality and one third of under-5 deaths. Neonatal tetanus (NT) is usually held responsible for at least 5%–7% of neonatal mortality. Strategies to reduce neonatal deaths must be delivered where births and deaths take place, not only in health facilities, but also

in communities and in the home — places that EPI often already manages to get to while other basic health services still do not.

Neonatal and maternal deaths continue to place a huge burden on health systems as well as on women and families. Most of these deaths are preventable and are due to the failure to implement simple, known interventions and to identify and address socioeconomic and cultural barriers to seeking and receiving care.

#### 2.1.2 Regional overview on immunization strategies: goals, targets, progress and issues

##### *Measles elimination*

Dr David Sniadack, Medical Officer-EPI/Western Pacific Regional Office, reported that regional measles incidence was 18.3 per million of the population in 2010, down from 26.7 in 2009. Regional coverage with MCV1 and second dose of measles containing vaccine (MCV2) reached 97% and 91%, respectively, in 2010. MCV1 coverage by district is improving in five priority countries: 78% of districts reported coverage >90% in 2010 compared with 56% of districts in 2007.

From September 2010, 120 million children were immunized with measles vaccine through supplementary immunization activities (SIAs) in five countries (Cambodia, China, Papua New Guinea, the Philippines and Viet Nam). Regionwide, from January to June 2011, surveillance sensitivity was good with a discarded measles rate of three per 100 000 (target  $\geq 2$ ); however, only 34% of second-level administrative units reported a discarded rate of at least one (target  $\geq 80\%$ ).

Adequate specimens were collected from 71% of suspected measles cases (target  $\geq 80\%$ ). Planned activities, including measles SIAs, surveillance and verification activities during the period 2011-2012 are budgeted at US\$ 4.5 million, with a funding gap of US\$ 2.7 million.

##### *Rubella control*

Dr Wang Xiaojun, Medical Officer-EPI/Western Pacific Regional Office, updated regional progress on accelerating rubella control. In 2010, reported rubella incidence was 25.6 per million of the population; 25 countries reported incidence <10 per million. From January to June 2011, 80% of cases occurred among children <15 years old. Nevertheless, many child-bearing age women (CBAW) are susceptible in countries that have not introduced rubella containing vaccine (RCV): in Viet Nam, 65% of cases were reported from CBAW and, in the Lao People's Democratic Republic, a 2010 serosurvey found that 36% of 15-19-year-old women were susceptible to rubella and a substantial proportion of these were likely infected during their child-bearing years.

Congenital rubella syndrome (CRS) is underreported and underrecognized: no CRS was reported in 2010. Cambodia, the Lao People's Democratic Republic, Papua New Guinea, Solomon Islands, Vanuatu and Viet Nam are the only countries in the Region that have not yet introduced RCV. However, the Lao People's Democratic Republic will introduce RCV beginning with its November 2011 SIA, targeting people nine months to 19 years old; Cambodia, Papua New Guinea and Viet Nam are exploring options to finance RCV.

##### *Sustaining polio-free status*

Dr Sigrun Roesel, Medical Officer-EPI/Western Pacific Regional Office, reported that following the review of progress reports from all countries and areas at its 16th meeting in

October 2010 of the Regional Commission for the Certification of Poliomyelitis Eradication (RCC), it was concluded that the Western Pacific Region had remained free of circulating poliovirus during the period covered by the country reports. The RCC also stated that having been certified polio-free for 10 years was an achievement probably comparable to reaching elimination.

Still, the RCC urged that there is no room for complacency, as reminded by poliomyelitis outbreak events in the European Region in 2010 — a Region that had been certified polio-free in 2002. The RCC considered this to be a stark reminder of the vulnerability so long as poliovirus transmission continues in other parts of the world, regardless of how long a country has remained polio-free.

A risk assessment conducted in 2010 for all countries in the Western Pacific Region on the potential spread of imported WPV classified three countries (Cambodia, the Lao People's Democratic Republic, Papua New Guinea) at high risk and four countries (China, the Philippines, Viet Nam) at medium risk. While a range of activities for risk mitigation is being implemented, the quality of surveillance and immunization activities is not yet universally at the level required to have good protection against poliomyelitis reintroduction. Performance gaps remain, leaving high-risk populations vulnerable.

#### *Hepatitis B control*

Dr Karen Hennessey, Technical Officer-EPI/Western Pacific Regional Office, summarized that in 2005, the Western Pacific Regional Office Regional Committee adopted a resolution to reduce chronic hepB infection to less than 2% among 5-year-old children by 2012 as an interim milestone towards a goal of less than 1%. From the Region-wide perspective, the 2012 milestone likely has been met.

On a country level, 27 countries and areas are estimated to reach the 2012 milestone. The nine countries that have not yet reached coverage levels needed to achieve control targets are Cambodia, Kiribati, the Lao People's Democratic Republic, Papua New Guinea, the Philippines, Samoa, Solomon Islands, Vanuatu and Viet Nam. In February 2011, the Hepatitis B Expert Resource Panel met and recommended to adopt a simplified verification process, country evaluation tool and reference points to ensure standard evaluations and also specified which countries should conduct seroprevalence surveys and which should begin the verification process. In July 2011, Hong Kong (China) and Malaysia were verified to <1% of the regional goal.

#### *Maternal and neonatal tetanus elimination (MNTE)*

Dr Sigrun Roesel, Medical Officer-EPI/Western Pacific Regional Office, summarized that all five countries that yet have to achieve elimination — Cambodia, China, the Lao People's Democratic Republic, Papua New Guinea and the Philippines — continued to make progress towards the goal with specific strategies worked out and implemented according to their national context.

In China, an MNTE panel led by the Maternal and Child Health division at the Ministry of Health and coordinated by the ministry's Bureau of Diseases Control, was established in 2010 with the participation of the Chinese Centers for Disease Control and Prevention (China CDC), the Capital Institute of Pediatrics and Peking University. As only one prefecture still had a rate above one NT case per 1000 live births (LB), MNTE validation is expected in 2012 once corrective maternal and child health (MCH) measures have been taken in this prefecture and others still considered at risk.

In the Lao People's Democratic Republic, a consultant, particularly reflecting the completion of three tetanus toxoid (TT) SIA rounds during the period 2009-2010, provided support in early 2011 to formulate an activity plan to achieve MNTE based on district risk assessment, draw up a framework for enhancing NT surveillance and response and prepare policy options for future immunization schedule options against tetanus.

In the Philippines, following a very comprehensive risk assessment process conducted jointly with UNICEF and WHO, preparations continued for conducting TT SIAs in the 10 highest risk provinces and cities. As in Viet Nam, five years had passed since MNTE had been validated. A review of all districts was conducted to summarize the post-validation status and take corrective actions as needed.

#### *Routine immunization*

Dr Yoshihiro Takashima, Technical Officer-EPI/Western Pacific Regional Office, summarized immunization strategies carried out by 12 countries in the Region during the period 2003–2010 to achieve the goals and coverage targets set by the Global Immunization Vision Strategy (GIVS) and the regional EPI initiatives, e.g. measles elimination and sustaining polio-free status.

Australia, Japan, the Republic of Korea and New Zealand conduct their routine immunization programmes with MCV 2 (MCV1 for children aged 12–23 months and MCV2 for children aged 4-6 years) and inactivated poliovirus vaccine (IPV) (except Japan) without SIAs after 2003, which is enhanced by the school-entry immunization requirement, screening or recommendation (for primary school students).

China, Malaysia, Mongolia and Viet Nam implement their routine immunization programmes with doses of MCV (MCV1 for children aged <12 months and MCV2 for children aged 1.5-2 years in China and Mongolia and 6-7 years in Malaysia and Viet Nam) and oral poliovirus vaccine (OPV). The programme is enhanced by the school-entry immunization requirement or recommendation for school-based immunization for primary school students and supplemented by the periodic mass vaccination campaigns with MCV and OPV.

Cambodia, the Lao People's Democratic Republic, the Philippines and Papua New Guinea conduct their routine immunization programmes with one dose of MCV (MV for children aged nine months) and OPV, which is supplemented by periodic mass vaccination campaigns with MCV, OPV and TT and is being strengthened by the "Reach Every District" (RED) approach.

#### 2.1.3 Lessons learnt from the recent national measles resurgence

##### *Viet Nam*

Professor Nguyen Tran Hien, NIP Manager from Viet Nam, briefly reviewed the large measles outbreaks during the period 2009-2010 that affected initially young adults in the northern region and then spread to the south and later involved primarily children <7 years old. In response, seven million children nine months to five years old were immunized during a nationwide measles SIA from September to November 2010 with 97% reported coverage and 6-year-old children were provided MCV2 upon school entry, resulting in a significant reduction of measles with only 13 laboratory confirmed cases reported from January to June 2011.

In 2011, the age of administration of MCV2 was shifted from six years to 18 months to reduce the accumulation of children susceptible to measles. Remaining challenges include improving routine coverage in slums, mountainous areas and mobile populations and

determining a strategy to address immunity gaps among adults. Surveillance guidelines are being revised and training was to be conducted in the second half of 2011. National laboratory capacity will be strengthened and monitoring, feedback and supportive supervision will be improved. Outbreak response immunization (ORI) will be conducted, if needed.

### *Cambodia*

Dr Ya Nareth, Senior Officer, NIP Cambodia, reviewed the increase in reported measles cases since 2009 that was geographically widespread and that revealed immunity gaps among children aged one to 14 years. A nationwide measles SIA targeting children ages 9-59 months was conducted from February to April 2011, immunizing over 1.5 million children with reported coverage over 100%. OPV, vitamin A and mebendazole also were administered. Surveillance data following the SIA revealed a substantial decrease in measles cases among under-5 children and continuing transmission among children 5-14 years old.

Surveillance also reveals large numbers of rubella cases during the period 2010- 2011 with 29% of cases among peoples 15 years or older. A second round subnational SIA targeting children 5-9 years living in high-risk communities was planned for November 2011. MCV2 will be introduced for 18-month-old children in 2012 through Global Alliance for Vaccines and Immunisation (GAVI) support. The suspected measles reporting system and incentive framework will be reviewed to minimize overreporting of suspected cases that do not meet case definitions and financial solutions will be sought to introduce RCV through an initial SIA followed by routine RCV introduction.

### *The Philippines*

Dr Joyce Ducusin, EPI Manager, Philippines, reviewed the history and recent developments towards measles elimination. A large measles outbreak began at the end of 2009 and continued in 2010 and 2011. A nationwide measles and rubella (MR) SIA was implemented successfully from April to June 2011 targeting children aged nine months to seven years, 11 months. Although only three months were available for SIA planning and preparation, good practices included high-quality microplanning, extensive social mobilization, implementation of a strict door-to-door vaccination strategy, good monitoring and supervision and extensive "internal" and "external" rapid coverage assessments.

An approach used for Child Survival Monitoring called "3As" (assess, analyse and agree on next steps) and "3Fs" (three follow-up visits) also was used during the SIAs. Surveillance data following the MR SIA suggest a dramatic decrease of measles cases in July, one month after the SIA. Continuing surveillance will be the ultimate measure of SIA success. An increased number of rubella cases were reported at the same time of the measles outbreak, thus a retrospective assessment of the burden of CRS is planned for 2012.

### *Malaysia*

Dr Rohani Binti Jahis, NIP Manager, Malaysia, reviewed measles elimination history in Malaysia and described the increase in reported measles cases during 2011. The measles virus spread to nearly all states and territories in 2011, with Kuala Lumpur and Sabah the most heavily affected. Measles cases were mainly children <10 years old, with the highest number among children 1-4 years old followed by infants and 5- to 9-year-old children. D9 and G3 genotypes were identified in 2010 and 2011.

Malaysia is conducting targeted "mopping up" activities in areas with outbreaks. It has rejected the proposal to target 2- to 4-year-old children instead of its school-based MCV2

administration at seven years old, primarily because of a concern regarding inadequate child use of government services. Reported MCV1 coverage was high in 2010, with 50% of the districts achieving at least 95% coverage; however, 16% of the districts are yet to reach 80%. Suboptimal vaccination coverage was especially common between new housing estate and highly mobile populations. Measles surveillance sensitivity met performance indicator targets, but the adequate specimen collection rate decreased from 96% to 80% to 63% in 2009, 2010 and from January to June 2011, respectively.

### *China*

Dr Cui Fuqiang, China CDC, reported that tremendous efforts are being made to achieve the measles elimination goal in China. From 2004 to 2009, 27 of 31 provinces (excluding Beijing, Shanghai, Henan and Heilongjiang) conducted province-wide measles SIAs immunizing 186 million children; in 2010, a nationwide SIA reached 103.4 million with 97.5% coverage.

Measles surveillance performance indicators improved in 2010 compared with 2009. During the period January–June 2011, a total of 8496 confirmed measles cases were reported, representing a 75% decrease compared with the same period in 2010. However, in six provinces (Xinjiang, Sichuan, Shaanxi, Zhejiang, Gansu and Tibet), the number of reported measles cases increased in 2011.

Measles epidemiology varies by province and even county, suggesting that different approaches will be needed. Migrants and adults represent a large percentage of cases in many provinces. Planned actions during the period 2011–2012 include SIA in counties classified as high or moderate risk, routine immunization strengthening, organizing an international technical consultation on measles elimination and conducting research to better identify and target high-risk groups. Verification criteria need to be established.

#### 2.1.4 Options for preventing measles outbreak and sustaining measles elimination

### *The Republic of Korea*

Dr Hyun Jin Son, Division of Vaccine Preventable Diseases Control, NIP, Korea Centers for Disease Control and Prevention (KCDC), reviewed the Republic of Korea's strategies for sustaining measles elimination. These included maintaining MCV coverage >95% through routine vaccination and school-entry requirements for MCV2 and strengthening surveillance by shortening the interval between rash onset and case notification and increasing the specimen collection rate.

Survey MCV1 coverage among children 16–72 months was 98% (95% CI 96.9 – 99.0) in 2009; MCV2 coverage at school entry has been >99% since 2002. Timeliness in notification has decreased from 15.8 days in 2006 to 5.6 days in 2011 and 90% of suspected cases had specimens (including throat swabs) collected from January to July 2011. After declaring measles elimination in 2006, the Republic of Korea experienced two outbreaks — a nosocomial and community outbreak involving 180 cases in 2007 and a 2010 outbreak with 93 case-students in a junior high school, 98% of which had certification of MCV2 (which was not certain).

A 2011 cluster of 16 cases in Changwon City involved a D9 genotype that was not previously identified in the Republic of Korea. Future plans include implementing school-entry requirements for kindergartens, intensive investigations that include identifying the source of infection and identifying resident foreigners from countries with low MCV coverage.

### *Japan*

Dr Shuichiro Hayashi, Deputy Director, Tuberculosis and Infectious Diseases Control Division, Ministry of Health Labour and Welfare, Japan, reviewed Japan's strategy for measles elimination and its achievements. During the large measles outbreak from 2007 to 2008 that caused many schools and universities to close, a national measles elimination plan was developed in December 2007. The plan included a five-year (2008–2012) rolling catch-up immunization targeting students at 7th and 12th grades annually (expanded in 2011 to 11th grade students travelling overseas), promoting and advocating routine immunization, school entry checks and nationwide case-based surveillance.

In 2010, routine MCV1 and MCV2 coverage was 96% and 92%, respectively; coverage of catch-up campaigns from 2008 to 2010 was 85%–87% among 7th grade students and 77%–79% among 12th grade students. The number of reported measles cases decreased by 93% from 11 012 in 2008 to 732 in 2009 and an additional 38% to 455 in 2010; 363 measles cases were reported in 2011 as of epidemiological week 28. Measles genotype D5 predominated from 2006 to 2008 whereas D9 predominated in 2010 and both D8 and D9 in 2011. Genotype D9 has not been detected in Japan since early 2010.

### *China*

Dr Cui Fuqiang, China CDC, shared experiences from two provinces (Guangxi and Guizhou) that are among the poorest provinces in China and that had high measles incidence in early 2000. The key strategies applied in Guangxi included annual SIAs in counties identified as high risk based on epidemic year predictions and also establishing a "Yellow Card" warning system for low-performing counties as one essential indicator of Government performance and thereby encouraging Government commitment to improve immunization services.

Serial SIAs in different counties over 10 years from 1999 to 2008 and participation in the national SIA in 2010 resulted in a slow decrease in incidence beginning in 2002 and a dramatic reduction in transmission during the period 2010–2011. In Guizhou, key strategies included quality implementation of province-wide catch-up measles SIAs during the period 2003–2004 and follow-up SIAs from 2007 to 2008 and in 2010, school-entry immunization requirements and the Yellow Card warning system for low-performing counties developed in Guangxi.

By 2011, very few confirmed measles cases were reported. Experience from these two provinces shows that measles elimination is feasible with different strategies and that high two-dose immunization coverage across wide age groups was the common element for success.

#### 2.1.5 Ensuring on-time hepB birth dose: challenges and options

### *The Lao People's Democratic Republic*

Dr Chansay Pathammavong, Deputy National EPI Manager, Ministry of Health, the Lao People's Democratic Republic, presented that the national hepB vaccine birth dose coverage was 28% in 2010; however, this includes vaccine given before and after 24 hours of birth. Lack of consistent data recording has prevented reporting coverage of timely (defined as within 24 hours) birth dose vaccination. Routine three-dose hepB vaccine coverage has increased to 74% in 2010 from 67% and 68% the previous two years.

Reaching high coverage is challenging in the Lao People's Democratic Republic because 85% of immunization services are provided during outreach conducted four times a year. In addition, only about 20% of newborn infants are delivered in health facilities. To improve

immunization services, the Lao People's Democratic Republic aims to increase the outreach frequency to six times a year, continue training SIAs on administration of birth dose vaccine, conduct pilot projects on how to best reach remote births and improve hepB vaccination data reporting and recording, especially for monitoring timely birth dose vaccination.

#### *Papua New Guinea*

Dr William Lagani, Manager of Family Health Services, National Department of Health, presented that in 2010, Papua New Guinea had 70% routine coverage for three doses of hepB vaccine and 35% timely birth dose coverage. Access to remote populations and a low proportion of facility deliveries are major challenges. In addition, missed opportunities to vaccinate newborn infants delivered in health facilities have been identified during supervisory visits.

Several activities have taken place to increase coverage, including providing cold chain equipment for labour and postnatal wards of all provincial hospitals, supervisory visits to provincial hospitals and implementing the RED strategy aimed at increasing routine immunization services. Papua New Guinea's next steps in preventing chronic hepB infection in children includes maximizing birth dose coverage among facility births and integrating vaccination into neonatal care, promoting facility births as part of strengthening maternal health services, ensuring training in nursing and paramedical curriculum, improving vaccination coverage monitoring and conducting a hepB seroprevalence survey in 2012 to gather data to guide programme activities.

#### *Viet Nam*

Dr Nguyen Van Cuong, Deputy National EPI Manager, Ministry of Health, summarized that Viet Nam introduced hepB vaccine subnationally in 1997, nationally in 2003 and timely birth dose vaccination became national policy by 2006. Coverage for both birth dose and three-dose vaccination were >90% in 2006 but has not been as high since reports of coincidental neonatal deaths in 2007. This has decreased confidence and demand for birth dose vaccination.

In response, activities to increase birth dose coverage have taken place such as organizing workshops to strengthen birth dose implementation and increase demand for vaccine, distributing implementation guidelines, drawing up education and awareness materials and piloting intervention projects in the lowest performing areas. Several lessons have been learnt such as the importance of involvement of provincial leaders, the community and parents, cooperation between preventive and curative services and consistent vaccine management and supply. Viet Nam has completed a national seroprevalence survey of 6962 children 2–10 years old. Preliminary data should be available soon.

#### 2.1.6 Identify high-risk districts and populations and follow-up intervention

##### *Regional framework for poliomyelitis risk assessment*

Dr Sigrun Roesel, Medical Officer-EPI/Western Pacific Regional Office, described how risk assessment is qualitative in nature and considers components of population susceptibility, the ability to detect and monitor poliomyelitis cases rapidly and other factors that influence poliovirus exposure and transmission in the population. These components are estimated and monitored by using indicators from a variety of sources and risk points are assigned. For each component, totals are summed and weights are given before being factored into a final risk categorization as "high" (e.g. >50% of total risk points), "medium" and "low" (e.g. <25% of total risk points).

Four countries in the Western Pacific Region in 2011 were considered high risk for imported WPV to cause a poliomyelitis outbreak; that is, Cambodia, due to subnational coverage gaps and insufficient surveillance; the Lao People's Democratic Republic, due to routine coverage <80%; Papua New Guinea, due to routine coverage <80% and insufficient surveillance; and the Philippines, due to routine coverage <80%, subnational coverage gaps and insufficient surveillance.

The IMB of the Global Polio Eradication Initiative, established by the World Health Assembly, has asked for strengthening and standardization of risk assessments conducted in polio-free regions and quarterly updates of the outcomes and risk mitigation activities being implemented.

*Introduction of WHO/UNICEF MNTE district risk assessment tool*

Dr Sigrun Roesel, Medical Officer-EPI/Western Pacific Regional Office, summarized that risk assessment for MNTE review is based on another examination of all data by district, using core and surrogate indicators that might vary by country. The relative importance and data quality of each parameter has to be weighed carefully and the analysis should be conducted of a series of data so that there is less chance of being misled by exclusively relying on one — potentially unreliable — indicator. Both knowledge of the field and epidemiological judgement are required.

When interpreting the data, caution must be exercised as many of the indicators have limitations. Core indicators by district include NT incidence, surveillance quality, clean delivery coverage and TT2+ coverage. Surrogate indicators might include (as indicators can be adapted) DTP1 and DTP3 coverage (including drop-out rate), antenatal care (ANC) coverage, rural vs. urban status and infant mortality rate.

The diverse situation in countries requires individual assessment approaches to guide implementation strategies and there are no one-fit-for-all but only guiding principles available. In the recommended set of core and surrogate indicators, identification of the “best” data source is important while indicators also should reflect specific situations (“local knowledge”). Repeated joint reviews of all districts may be conducted with all relevant partners and consensus on risk reached together. The purpose of this risk assessment approach is not a form-filling exercise but finding the women still in need and identify systems capacities.

*The Lao People's Democratic Republic — application of the tool and its impact*

Dr Anonh Xeuatvongsa, National EPI Manager, presented the experience of the Lao People's Democratic Republic in using the MNT district risk assessment tool to identify districts with low EPI performance, which therefore need focused interventions and SIAs. The Government has been working vigorously to meet the national goal of MNTE by 2012, which includes conducting three rounds of TT SIAs in 99 of 141 districts from November 2009 to December 2010.

Following the TT SIAs, a nationwide district MNT risk assessment which was carried out from February to March 2011, showed that another one to two rounds of catch-up TT SIAs should be carried out in 24 districts in 12 provinces for meeting the 2012 national goal. The MNTE district risk assessment tool uses TT2+ coverage and NT surveillance data as "core" indicators and ANC visits, which are not always reliable in the Lao People's Democratic Republic.

Therefore, the proportion of rural population, facility delivery, ANC rate, poverty level, literacy rates, primary school enrolment rates, etc., were used as "surrogate" indicators to assess the risk status of districts and identify high-risk districts needing TT SIAs. The process and the tool have been used successfully to further pinpoint remaining high-risk districts. The tool's use will be further complemented by additional desk and on-site reviews in the identified high-risk districts in preparation for MNTE validation.

*Cambodia — identification of high-risk communities based on MNTE strategies, EPI review and SIAs*

Dr Chheng Morn, Immunization Officer, NIP, introduced a strategy to identify high-risk communities based on the data obtained from MNTE approaches, national EPI review and SIAs. The post-EPI evaluation showed that, in Cambodia, the traditional indicators for high-risk communities based on coverage such as distance from health centres, reported EPI coverage by village, the number of actual outreach contacts per year, etc., are not always reliable to identify those communities. Socioeconomic indicators and classification of villages can improve identification of high-risk areas.

People with good access and bad access are often mixed together in the same community. Several communities in urban areas with good health services have no access to them. A population denominator is usually not reliable in several communities. Recently established communities are usually not registered for the immunization service. Some communities have no planned outreach but actively use fixed-site immunization services.

Therefore, to identify high-risk communities, the NIP is working with provinces and districts in visiting communities and families and checking the immunization cards held by the family and the record during SIAs so that the quality of service delivery could be measured more accurately.

*Western Pacific Region district EPI/VPD risk assessment tool*

Dr Jorge Mendoza Aldana, Medical Officer-EPI/Western Pacific Regional Office, referred to the 2010 intercountry workshop, where district level EPI performance was discussed, as the driving event for the development of the approach. Participants at that workshop highlighted the need for a tool that synthesizes collected EPI monitoring data in a meaningful and understandable way.

An overall explanation of the potential of the tool and what it was expected to produce was followed by a succinct description of the steps undertaken and the current status of development. Statistical procedures were conducted to identify and select relevant data elements, among those being collected by EPI in the Lao People's Democratic Republic, which could be used in the tool. Those data elements fell into six categories: demographics, immunization system, poliomyelitis, measles, hepB and maternal and neonatal tetanus.

Thresholds or standards for each data element were defined and a scoring system according to whether the threshold was met was proposed. The Regional Office is working on seeking a weighting system that produces a meaningful synthesis of the data into categories of performance, such as low- medium- and high-performing districts. The presenter finalized his intervention by highlighting the limitations of the tool and acknowledging those who contributed.

### 2.1.7 Progress, impact and challenges of Reaching Every District (RED) strategies

#### *Mongolia*

Dr Sarankhuu Amarzaya, Officer at the Immunization Department, National Center for Communicable Diseases, presented the RED strategy and its impact on the health programme in Mongolia. The RED strategy in Mongolia, started in one district in Ulaanbaatar in 2008, has been expanded to four districts in Ulaanbaatar and five districts outside of Ulaanbaatar until 2011, according to a determination of high-risk areas (based on population size and density, high rate of demographic migration, location of big markets, dormitories and remote subdistrict and potential geographical expansion of the residence) and hard-to-reach populations (based on population mobility, remoteness and vulnerability (e.g. homeless, children in orphanages, etc.) and status of registration).

While the RED strategy was proposed by the international immunization partners in 2002 to improve immunization services at the district level, the RED strategy in Mongolia is an integrated health service package at the district level consisting of not only immunization services but also integrated management of child illness (IMCI), child development and protection, prevention of micronutrient deficiency among children, safe motherhood and reproductive health, water supply, hygiene and environmental health, social welfare and collaboration with administrative units and police departments at each level.

Achievements in implementing the RED strategy in Mongolia include more vulnerable populations integrated into the health and social welfare services; area-specific health problems identified; improvement of both intersectoral coordination and Government-nongovernmental organization (NGO) collaboration; and promotion of the awareness of the roles of families, communities and clinics in health service delivery.

In April 2011, a health minister's order was approved as national strategy for health system strengthening using RED and a national coordinator for the strategy was designated. The Government of Mongolia is planning to expand the strategy nationwide with its own budget.

#### *Papua New Guinea*

Steven Toikilik, National EPI Manager, presented a national initiative using RED strategies, called "Reaching Every District to Reaching Every Child (REC)" initiative. REC started in late 2010 in the identified 23 low-performance districts based on DTP-3 coverage and the number of unvaccinated children. The initiative targeted "hot spots" (e.g. urban settlements, areas with the provincial border, districts, villages and areas with large populations) with active supportive supervision to identify critical issues in low-performance districts, enhancement of outreach, social mobilization and community involvement.

The initiative plans to identify and track both pregnant women and children aged <1 year in "hot spots". The national Department of Health will institutionalize the initiative to cover other districts beyond 23 low-performance districts to strengthen district health activities as part of the National Health Plan 2011-2020 and engage all partners to the initiative to mobilize financial, logistical and technical support to address the gaps identified.

## 2.1.8 Summary on immunization strategies

### *The Lao People's Democratic Republic*

Dr Anonh Xeuatvongsa, National EPI Manager, presented a summary of immunization strategies in the Lao People's Democratic Republic with the introduction of challenges in immunization services and options for overcoming these challenges. The challenges were characterized by:

- (1) the natural environment (e.g. difficult terrain, a lot of remote minority groups, insufficient road access, etc.);
- (2) insufficient subnational level commitment in funding, social mobilization and information-sharing;
- (3) critical technical issues, including limited human resources, lack of communication and coordination between vaccination teams and village leaders, weak management of cold chain;
- (4) donor-dependent financing with irregular fund flow and complicated liquidation process;
- (5) difficult communication with ethnic minority groups and insufficient community understanding and demand for immunization services; and
- (6) incomplete birth registration at the village level.

These challenges have resulted in a significant number of districts with suboptimal routine vaccination coverage with all antigens (e.g. the numbers of districts with third dose of diphtheria–tetanus–pertussis vaccine [DTP3] coverage <80%, OPV3 coverage <80% and MCV coverage <80% are 88, 77 and 116, respectively, among 143 districts in 2011).

Dr Xeuatvongsa mentioned that the practical solutions for these challenges included:

- (1) Accelerate advocacy activities at both the national and subnational levels with development of a national EPI policy.
- (2) Expand the RED initiative, which had been launched in Phongsaly Province in the Lao People's Democratic Republic with the support of WHO in 2011. It established and enhanced the involvement of and linkage with the community in villages in immunization services and supportive supervision by the provincial EPI department over districts and health centres and other provinces with high-risk or weak performance districts.
- (3) Promote integration of immunization services into a maternal and newborn child health (MNCH) package in more districts.
- (4) Formulate a national policy and procedure for out-of-cold chain administration of hepB birth dose in remote villages.
- (5) Formulate a national policy to increase the frequency of outreach and increase fixed-site immunization opportunities as well as advocating for greater Government funding for immunization services.

### *Cambodia*

Thiep Chanthan, Senior Programme Officer, Ministry of Health, introduced immunization strategies in Cambodia and the goals of the national immunization programme. For sustaining polio-free status, vaccination campaigns with OPV targeting children <5 years old continue to be carried out targeting high-risk and hard-to-reach areas to achieve and maintain high coverage of OPV. For measles elimination, two phases of measles SIAs will be completed in 2011: the first phase targets children aged 9-59 months nationwide and the second targets children aged 5-9 months in high-risk areas. In addition, the second doses of measles vaccine will be introduced into the routine immunization programme for children aged 18 months beginning in 2012.

Rubella elimination is considered through the introduction of rubella vaccine into the measles elimination activities from 2013.

For MNTE, an accelerated effort is being made to improve registration of CBAW on TT vaccination status, to improve TT2+ coverage for pregnant women and CBAW in high-risk communities through strengthening the routine immunization programme and to complete TT SIAs in high-risk districts in 2011.

Critical immunization challenges that Cambodia face include:

- (1) maintenance of awareness and knowledge of acute flaccid paralysis (AFP) among clinicians for over 10 years after the regional poliomyelitis eradication was achieved;
- (2) remaining immunity gaps in high-risk communities and among older age groups after the measles SIAs in 2011;
- (3) improving the coverage of on-time birth dose of hepB vaccine among infants born out of the health facility; and
- (4) heavy dependence of the programme budget on external funding.

### *Mongolia*

Dr Sarankhuu Amarzaya, Officer at the Immunization Department, National Center for Communicable Diseases, summarized the immunization strategy carried out in Mongolia, which consists of:

- (1) A routine immunization programme with two doses of MCV (started in 1989 and monovalent measles vaccine replaced by MMR in 2009 for children aged nine months and 24 months.
- (2) National immunization days (NIDs) conducted twice a year (last 10 days in May and first 10 days in October).
- (3) SIAs with selected vaccines (e.g. subnational SIAs with rubella vaccine in 2009, subnational SIAs with OPV in 2010, etc.).
- (4) School-based immunization with DT for children aged seven years old and 15 years old.
- (5) Outreach immunization (quarterly or during NIDs or SIAs).

- (6) RED strategies (expanding in Ulaanbaatar and to five provinces in 2011).
- (7) Voluntary immunization supported by the Immunization Fund of Mongolia.
- (8) Immunization based on epidemiological indications (e.g. groups at occupational risk, etc.).

These immunization strategies are supported by policy documents, e.g. the law of immunization of Mongolia, the comprehensive Multi-Year Plan on the National Immunization Programme, the National Strategy for Combating Viral Hepatitis, the National Plan for Wild Poliovirus Importation, the National Programme on Communicable Disease Control, governmental resolutions and the Health Minister's orders, etc.

To address several critical challenges, e.g. financial sustainability of the NIP, suboptimal immunization coverage in several districts, quality of immunization services (human resources, vaccine management, surveillance, adverse event following immunization (AEFI) monitoring, etc.), insufficient public awareness on immunization services, etc., the following options are being carried out or planned to conduct: strengthening advocacy for policy-makers on NIP financing, expanding the coverage of RED strategies, more actively conducting staff training and supportive supervision and improving surveillance with the introduction of molecular methods into laboratory testing.

### *Papua New Guinea*

Dr William Lagani, Manager of Family Health Services, National Department of Health, introduced four components of vaccine delivery strategies in Papua New Guinea: the routine immunization programme with clinic-based fixed, outreach and mobile vaccination sessions, SIAs, a school-based immunization programme with TT and periodic intensification of a routine immunization programme by province.

Each of these components supports the “Reaching Every District - Reaching Every Child” initiative. For example, integration of the routine immunization programme with measles SIAs demonstrated an increase in the number of children vaccinated with DTP-HepB-Hib in 2010 from that in 2009 and the periodic intensification of the routine immunization programme promoted reaching out to target more children in the provinces, etc.

Several critical challenges were identified in the present system, e.g. rapid urbanization leading to unorganized settlements, an inadequate health system and no EPI-specific structures at the provincial and district levels. The following options are being carried out or planned to be conducted in Papua New Guinea: expanding the “Reaching Every District - Reaching Every Child” initiative to all districts, strengthening communication activities at the community level and introducing the second dose of measles vaccine in the second year of life, improving vaccine management and VPD surveillance.

## 2.2 Surveillance and Laboratory Network for Poliomyelitis and Measles and Rubella

### 2.2.1 Surveillance

#### *Acute flaccid paralysis (AFP) surveillance*

Dr Sigrun Roesel, Medical Officer-EPI/Western Pacific Regional Office, said complete and timely investigation of AFP cases remains essential to reliably detect polioviruses. In terms of key aspects of AFP surveillance quality, five countries did not reach the minimum

nonpoliomyelitis AFP rate of one per 100 000 children under 15 in 2010 (Cambodia, the Republic of Korea, New Zealand, Papua New Guinea and Singapore). Several countries did not reach adequate stool specimen collection rates of at least 80%. Reporting of AFP cases in 2011 (as of 1 August) was declining in Cambodia, Papua New Guinea and the Philippines and WHO is providing specific support to all three countries. The Regional Certification Commission also performed targeted AFP surveillance reviews in Cambodia and the Philippines, leaving detailed sets of recommendations.

#### *Measles and rubella surveillance*

Dr Wang Xiaojun, Medical Officer-EPI/Western Pacific Regional Office, summarized that case-based measles surveillance is conducted in all countries and areas of the Region and is needed to detect and describe residual measles virus transmission and close immunity gaps, to distinguish between endemic and imported or import-related measles cases and to verify the absence of endemic measles virus transmission.

Reporting from countries and areas to the Western Pacific Regional Office has improved annually since 2007, reaching 94% completeness and 79% timeliness in 2010. In 2010, the discarded measles rate was 2.8 per 100 000 population (target >2), but only 37% of second-level administrative units reported at least one discarded measles case per 100 000 population (target = 80%).

Among suspected cases, adequate investigations were conducted for 39% (target = 80%) and adequate specimens were collected from 68% (target = 80%). Surveillance performance indicators improved slightly from January to June 2011, except for a decrease in adequate investigations to 34% in 2011. Surveillance performance varied among countries and areas.

Surveillance deficiencies in various countries included reporting only suspected cases that were investigated and not all suspected cases (artificially increasing the adequate specimen collection rate), using different case identification numbers by surveillance and epidemiology units and laboratories for the same cases, delays in entering or updating data, discrepancies in epidemiologic and laboratory data and a failure to collect specimens for virus detection (e.g. nasopharyngeal or throat swabs).

In many countries, rubella cases are identified through measles surveillance, leading to underreporting of rubella cases. Although only 14 of 37 countries and areas currently conduct surveillance for CRS, many are interested in establishing CRS surveillance.

#### 2.2.2 Laboratory network: progress, current status, challenges and future

##### *Poliomyelitis laboratory network, measles and rubella laboratory network and the Japanese Encephalitis (JE) laboratory network*

Dr Youngmee Jee, Scientist, EPI/Western Pacific Regional Office, summarized the progress, challenges and future plans of poliomyelitis, measles/rubella and Japanese Encephalitis (JE) laboratory networks in the Region. Over 430 designated laboratories (43 poliomyelitis, 382 measles/rubella and 10 JE) participate in WHO's quality assurance programmes, including annual accreditation based on proficiency testing, confirmatory testing and on-site review based on evaluation of laboratory performances during previous one-year review periods.

As of August 2011, all poliomyelitis laboratories, 47 measles laboratories and seven JE laboratories were fully accredited based on regular on-site reviews by WHO and other accreditation criteria such as proficiency tests and confirmatory testing. As the Region is

approaching the target year of measles elimination, much emphasis has been given to the molecular epidemiology of circulating viruses by providing training opportunities for molecular analysis and by conducting virologic investigation of cases in countries.

### 2.3 Certification, verification, validation process

#### *Poliomyelitis eradication and sustaining poliomyelitis-free status*

Professor Anthony Adams, RCC Chairperson, emphasized that the certification structure established in the mid-1990s remains in place, even after certification. Currently, the regional commissions and national committees take the key roles in the three-tiered approach. Regional commissions have a continued responsibility to report to the global commission.

Active and well-functioning national certification committees are considered essential since an independent oversight mechanism at the national level is critical and can be of great benefit to the programme, particularly in terms of advocacy. The RCC continues to meet annually and requests written progress reports from each country. Detailed guidelines are provided regarding what is expected to be covered in the report.

The RCC at each meeting works out general and country-specific conclusions and recommendations, which it reports directly back to the chairperson of the national committee but which is also copied to the relevant programme managers. If the RCC has particular concerns, it requests interim reports or even visits the country concerned. As much as possible, the RCC prefers to hold annual meetings in countries in order to have opportunities to meet with programme colleagues and directly observe activities.

The RCC expects the WHO Secretariat to coordinate all aspects of its annual meetings. In the interim, the RCC greatly relies on the Secretariat in terms of communicating and coordinating all relevant updates of the global poliomyelitis programme between the commission and the national programmes.

#### *Measles elimination: Regional overview*

Dr David Sniadack, Medical Officer-EPI/Western Pacific Regional Office, reviewed progress towards measles elimination in the Region and by country, predicting that in 2012 measles incidence would be <1 per million in 27 countries and areas, 1–4 per million in five countries and 5–9 per million in the remaining four countries. He also noted that import-related cases and transmission within countries could result in overall measles incidence of >1 per million and that overall incidence as an indicator of elimination should be interpreted cautiously.

Dr Sniadack then reviewed the background for working out a mechanism for measles verification in the Western Pacific Region. A technical consultation with participation from eight Member States was organized in June 2010. The 2010 TAG endorsed the conclusions and recommendations from the technical consultation and a 2010 Regional Committee resolution requested the Regional Director to establish regional verification mechanisms and urged Member States to establish an independent national verification process.

Recommendations were reviewed from the technical consultation and TAG meeting on verification commission and committee structure and function and verification components and indicators. A plan was outlined for establishing a regional verification commission (RVC) and finalizing RVC terms of reference and verification guidelines and criteria based on experience from other WHO regions and in consultation with Member States.

*Measles elimination: Australia's experience in measles elimination and its verification*

Professor David Durrheim, University of Newcastle, Australia, and member of the Strategic Advisory Group of Experts (SAGE), reviewed the status of measles elimination in Australia with reference to the five components of verification -- specifically, high population immunity, incidence and epidemiologic analysis, high-quality surveillance, virologic analysis and a good, sustainable routine immunization programme.

Professor Durrheim presented data demonstrating consistently high two-dose MCV coverage with MCV1 >95% and MCV2 >90% since 2004, serologic evidence of population immunity >90% since 2002, the self-limited nature of measles outbreaks in Australia (few generations of transmission and limited duration) and an estimated reproductive number (R0) <1 from 2003 through 2012.

Although incidence has been >1 per million, endemic genotypes has not been detected since 1999 and a large proportion of measles cases are imported or import-related. In 2011, the measles virus was imported from 11 countries, including four from the Western Pacific Region. Surveillance performance indicators in the Hunter New England Region of New South Wales (population 880 000) met WHO-recommended standards. Different genotypes detected in Australia included D4, D8 and D9. Professor Durrheim concluded that Australia was ready for verification of measles elimination.

*Hepatitis B control*

Dr Karen Hennessey, Medical Officer-EPI/Western Pacific Regional Office, said the hepB Expert Resource Panel (ERP) was established in 2007 mainly to serve as a pool of independent experts for verifying the achievement of regional hepB control by the Member States. In 2011, the ERP met to review the status of reaching the Region's 2012 milestone. The ERP was impressed with progress and recommends that the target year for the 1% goal be established and proposed as a 2012 Regional Committee Meeting agenda item.

The ERP reviewed, modified and adopted tools for simplifying and standardizing the process by which countries are evaluated for verification. This included a standard verification package with a two-page coversheet, evaluation criteria and reference points to facilitate consistent evaluation across countries. The ERP also reviewed country data to make recommendations for countries that likely have achieved the hepB control targets; six countries were recommended to begin the verification process, five countries need data clarification and 10–13 countries may want to conduct serosurveys.

*MNTE: China's experience towards validation*

Dr Luo Shusheng, Lecturer, Department of Child, Adolescent and Women's Health, School of Public Health, Peking University, summarized that MNTE in China is being pursued by the Safe Motherhood Programme, led by the Ministry of Health, the National Working Committee on Children and Women and the Ministry of Finance. Increased clean and hospital delivery, as a high public health priority and the main strategy to achieve MNTE, have resulted in a major decrease in the number of NT cases. These two strategies have been integrated into rural health system reform as a long-term plan to achieving and maintaining the elimination goal.

In 2010, an MNT elimination panel led by MCH, Ministry of Health and coordinated by the Bureau of Diseases Control, Ministry of Health, was established with the participation of the China Centers for Disease Control and Prevention (China CDC), the Capital Institute of Pediatrics and Peking University to prepare for validation of elimination. The globally

recommended scoring MNT risk assessment is applied to classify all 333 prefectures after indicators to be used in the risk assessment framework were agreed upon. The indicators reflect not only classical MCH measurements of achievement but also other socioeconomic characteristics that help provide the macro-context of the prefecture and use EPI NT surveillance data in a strong collaborative approach towards a common goal. One validation survey will be conducted in eastern China, another in western China.

## 2.4 Immunization safety

### *Regional overview on immunization safety*

Dr Md. Shafiqul Hossain, Technical Officer-EPI/Western Pacific Regional Office, summarized the history of the immunization system for last 35 years, which has become mature and successful. With the targeted diseases for eradication and elimination and with the availability and accessibility of more new vaccines in the Region and globally, the immunization safety effort has become increasingly more important.

He described the component of immunization safety, which consists of, among others, the National Regulatory Authority (NRA) system, the AEFI surveillance system, the EPI supply chain system and injection safety and waste management. The AEFI surveillance system is one of the major components of immunization safety. All countries may want to have effective vaccine safety systems, including preparedness, monitoring and prompt response to ensure safe vaccine and to maintain public confidence on immunization programme.

Data from the Joint Reporting Form (JRF) in 2010 demonstrated that 26 countries and areas conduct AEFI surveillance, six do not and no information on AEFI surveillance is available on the remaining four. Among countries and areas that conduct AEFI surveillance, quality varies widely, which needs to be addressed properly. He also shared the vaccine safety activities conducted during the pandemic A (H1N1) 2009 vaccine deployment and vaccination and major lessons learnt from it.

### *AEFI due to DTP in the Philippines and its impact on the immunization programme*

Ms Dulce C Elfa, National Coordinator, National Epidemiology Center, presented the topic on "Lessons learnt from the DTP AEFI in a city in the National Capital Region, Philippines". Following the report received on 11 August 2010 on deaths allegedly due to AEFI, she described the immediate action taken for investigation and response. The concerned City Health Office temporarily administered vaccinations using the implicated DTP lot. Locally, in the Food and Drug Authority (FDA), the vaccine was tested for safety, sterility and pertussis-specific toxicity and abnormal results were found on the latter.

The Causality Assessment Committee held a special meeting to review the cases and test results from the FDA and a repeat test of the same DTP lot by a WHO-accredited laboratory was recommended. Upon request by the Department of Health, WHO supported a test of the vaccine at the Therapeutic Goods Authority (TGA) Australia, which found the vaccine acceptable. Ms Elfa said there was a huge implication for the immunization programme because of this AEFI issue and shared in detail the lessons learnt, which included:

- (1) to improve the quality of AEFI surveillance, particularly on case investigation;
- (2) to look into all factors that may contribute to AEFI before considering laboratory testing;

- (3) to continue training on surveillance and response to AEFI;
- (4) to strengthen capacity of vaccine NRA (FDA);
- (5) to appropriate funds for up-to-date training for laboratory personnel to conduct vaccine testing and use of appropriate guidelines for testing vaccines;
- (6) to improve safe injection practises;
- (7) to improve communication and coordination between surveillance and EPI for appropriate planning, response and technical guidance to decision-makers in the Department of Health; and
- (8) to formulate policy on testing implicated vaccines upon the recommendation of the Institute for Systems Biology/National AEFI Committee.

#### *AEFI in Viet Nam and its impact on the immunization programme*

Dr Nguyen Hang and Dr Nguyen Van Cuong, from the General Department of Preventive Medicine, the Ministry of Health, Viet Nam, presented the topic "AEFI in Viet Nam 2010–2011". They described the regulation on AEFI in Viet Nam, including training received by staff in AEFI and materials available. They then shared the number of serious AEFI cases reported in 2010 and 2011 and the actions that had been taken by the Ministry of Health.

Among the death cases in 2010 allegedly due to AEFI after proper assessment, it was concluded that only one case was anaphylactic shock relating to vaccine and none of the others was related to vaccine. Among the reported five cases of serious AEFI in 2011, after assessment it was concluded that nothing was related to vaccines. They mentioned that after evaluation, the AEFI council in Viet Nam concluded that the vaccine is safe and should continue to be used in EPI.

### 2.5 New vaccines and technologies

#### 2.5.1 Surveillance for new VPDs: progress, current status, challenges and the future

##### *Invasive bacterial disease (IBD) surveillance and rotavirus surveillance*

Dr Kimberley Fox, Technical Officer-EPI/Western Pacific Regional Office, reviewed progress and challenges in the WHO-coordinated sentinel surveillance networks for rotavirus diarrhoea and IBD-VPD (meningitis, pneumonia and sepsis caused by *Haemophilus influenzae*/Hib, pneumococcus and meningococcus). Seven countries (Cambodia, China, Fiji, the Lao People's Democratic Republic, Mongolia, Papua New Guinea and Viet Nam) enrolled over 6000 children hospitalized with severe diarrhoea in 2010. Across countries, 25%-61% had rotavirus. Mongolia, Papua New Guinea, the Philippines and Viet Nam conducted IBD-VPD surveillance in 2010, enrolling over 1000 cases of meningitis and over 3000 cases of pneumonia and sepsis. Across countries, 9%-19% of meningitis cases were vaccine-preventable.

Pathogen diagnosis in pneumonia cases was technically challenging, with only 0.5% of cases having a positive culture. Data were used to support decision-making in five countries and GAVI pneumococcal conjugate vaccine (PCV) applications in three countries in 2011. Key elements in the success of this surveillance include implementation within national surveillance systems and standardization of procedures, testing and data to ensure quality.

### *Laboratory networks for IBD and rotavirus*

Dr Fem Julia Paladin, Technical Officer-EPI/Western Pacific Regional Office, presented the progress and challenges in establishing the IBD and rotavirus laboratory networks. Formally established in 2010, the laboratory networks are organized into various levels of sentinel site and national, regional and global reference laboratories following the model of the poliomyelitis and measles laboratory networks.

Fully 17 IBD laboratories in six countries and 28 rotavirus laboratories in nine countries generate information on the prevalence and distribution of specific serotypes and genotypes of *H. influenzae*, *S. pneumoniae* and *N. meningitidis* strains and rotavirus genotypes to ensure that the purposes of the new vaccines surveillance are achieved. Quality assurance mechanisms, including proficiency testing, have been developed and training courses have been organized to familiarize the laboratories with their roles and responsibilities and the requirements for performance quality and data management using updated laboratory databases.

The laboratory networks are new and modifications in work practises are needed to meet required standards and targets. Monitoring laboratory performance, use of standardized laboratory data reporting, supportive on-site assessment and efficient supplies management are critical for effective coordination of network activities. Formalization of national laboratories under ministries of health is needed to promote sustainability.

#### 2.5.2 Introduction of new vaccines and technologies

##### *Overview of challenges and lessons learnt in decision-making processes and prioritization of new vaccines*

Dr Kimberley Fox, Technical Officer-EPI/Western Pacific Regional Office, summarized key policy issues in decision-making for new vaccine introduction. The burden of disease is a major consideration and with 20% of under-5 mortality in the Western Pacific Region caused by pneumonia and meningitis, several countries have prioritized PCV after successful introduction of Hib vaccine. Another 4% of under-5 mortality is caused by diarrhoea, half of which is due to rotavirus.

Cervical cancer has a high burden in many Western Pacific Region countries, especially the Pacific island countries. WHO position papers guide decision-making through recommendations for vaccine use and immunization strategies. Prevalent serotypes, systems to deliver immunizations to age groups beyond infancy and surveillance data to guide geographic or age group targeting are also important in establishing policies for new vaccines.

Successful aids in decision-making include cost-effectiveness tools (ProVAC), relative benefit tools (Lives Saved Tool), independent advisory groups (NITAGs), costing tools and others. Ultimately, selection and prioritization of new vaccines for introduction depends on public health priority, cost-effectiveness, sustainability and operational considerations.

##### *Regional overview: Progress and programmatic challenges in introducing new vaccines in the countries in the Western Pacific Region (2010)*

Dr Md. Shafiqul Hossain, Technical Officer-EPI/Western Pacific Regional Office, reviewed the progress of new and underutilized vaccine introduction in the Region and reported that substantial progress has been made in introducing new vaccines. As of June 2011, 31 countries and areas provide Hib vaccine through their national immunization programmes. Hib vaccine is also available in the remaining five countries and areas (China, Hong Kong [China],

Japan, the Republic of Korea and Singapore) through local government systems or the private market and clinics.

A total of 14 (39%), seven (19%) and 14 (39%) countries and areas in the Region had introduced PCV, rotavirus vaccine and HPV vaccine, respectively, in their NIP. Among the successes achieved, he also shared some key programmatic challenges for the introduction of three new vaccines. The presentation of prequalified PCV-10 is a two-dose vial without a preservative, which is not compatible with the present multidose vial policy. To address this issue, WHO has been working to develop a visual cue to be placed on the vaccine vial label.

For both rotavirus vaccines, age restriction is a major challenge and adequate preparation, including social mobilization and training are important to ensure that health care workers and parents know the importance of timely vaccination. HPV vaccine is different from most EPI vaccines in terms of target and school-based delivery strategies are commonly used, including health centres, as a supplement. He also stated that most of the new vaccines are costly and bulkier than traditional vaccines, requiring more space during storage and transport. Communication strategies are essential to engage communities in understanding the benefits of new vaccines and to minimize the potential for adverse impact from rumours and other inaccurate information or allegations.

*Country experience on PCV introduction (Singapore)*

Mr Yuske Kita, Senior Public Health Officer, Communicable Disease Division, Ministry of Health, gave a presentation on his country's experience with PCV introduction in Singapore. He shared the report of a national study of the epidemiology of pneumococcal disease among hospitalized patients in Singapore from 1995 to 2004. He mentioned that challenges of PCV vaccine introduction might be different from other countries as Singapore is small city-state with a total population of five million. PCV-7 vaccine was registered at the Health Sciences Authority in Singapore in May 2002 and it became widely available in 2005.

Singapore has established expert committees on immunization and advises the Ministry of Health in strategies and control of VPDs through immunization. PCV vaccine was incorporated in the National Childhood Immunization Programme (NCIP) in November 2009. PCV-10 and PCV-13 vaccines also were registered in Singapore in 2010 and guidelines issued in January 2011. Mr Kita mentioned the importance of baseline data, surveillance for monitoring and evaluation and communication with health professionals and the public.

*Regional update on National Regulatory Authorities (NRA) in the context of the introduction of new vaccines*

Dr Yoshikuni Sato, Medical Officer-EPI/Western Pacific Regional Office, reviewed the history of the NRA strengthening programme and shared the functional status of NRA by countries in the Region. Seven countries in the Region have functional NRA status that regulates the use of vaccines. Vaccine introduction trends are excellent in the Region. Unlike in the past, few new vaccines were planned to be introduced in some low- and middle-income countries in coming years.

In this rapidly evolving situation, an NRA has a unique role to ensure that up-to-date quality, production and verification standards are met. He shared the vaccine procurement systems in the Region, which vary from a United Nations-based procurement system, to procurement from domestic manufacturer, to procurement systems based on competitive international bidding. Some countries use mixed procurement strategies.

He said that countries using new vaccines from their domestic manufacturers require fulfilling the six NRA functions and countries introducing new vaccines by procuring vaccine through United Nations agencies must have licensing and marketing authorization and post-marketing surveillance. He urged the Member States to have an independent, competent and effective regulatory system to support assured quality vaccines for an immunization programme.

*JE: Report on a biregional JE meeting*

Dr Kimberley Fox, Technical Officer-EPI/Western Pacific Regional Office, reported on the fifth Biregional JE Meeting held in Vientiane, the Lao People's Democratic Republic, in May 2011 to review progress in JE surveillance and vaccination programmes and to define future directions for JE control. Fully 66 participants from 16 countries in the South-East Asian and Western Pacific Regions and partner organizations shared technical updates and lessons learnt and developed country plans.

Substantial progress has been made since the last biregional meeting in 2009, with surveillance expanding in countries with limited disease burden data, pilot vaccination initiated in Cambodia and continued expansion of vaccination in Viet Nam. Further improvement of surveillance quality is needed and JE vaccine supply is complicated by the absence of a WHO-prequalified vaccine.

Future plans for JE control in the Western Pacific Region include initiation of JE surveillance in Papua New Guinea, expansion of JE surveillance in the Philippines, evaluation of JE vaccination in Viet Nam and China and introduction of JE vaccine in high-risk areas of the Lao People's Democratic Republic and the Philippines.

2.6 Advocacy for immunization

*Regional Immunization Week*

Gabriel Anaya, Programme Management Officer-EPI/Western Pacific Regional Office, emphasized that Vaccination Week is an event that highlights the importance of protecting infants from VPDs and celebrates the achievements of immunization programmes and their partners in promoting healthy communities. The Western Pacific Region joined the efforts of the American, Eastern Mediterranean and the European Regions in a call to action to ensure that infants around the world are fully immunized.

Events included vaccination, social mobilization and media campaigns, proclamations by high-ranking officials and advocacy meetings, among others. Fully 29 countries in the Western Pacific Region successfully conducted activities ranging from media events such as official launching ceremonies to special vaccination clinics to focus attention on immunization achievements and celebrate the accomplishments made possible through successful collaboration. Planning for Immunization Week 2012 has started with the aim of having full participation from the Region in order to open doors for resource mobilization activities at the local, national and regional levels.

*Papua New Guinea*

Papua New Guinea joined 29 countries and areas in the Western Pacific Region and other countries in the world in 2011 in celebrating the achievements of immunization and also highlighting the importance of protecting infants and children from VPDs through Vaccination Week from 26 to 31 April 2011. The main objective of the week was to vaccinate

children attending the child outpatient and inpatient departments in all provincial and district hospitals, thereby reiterating the concept of "Vaccination at Every Opportunity".

Activities included the Secretary of Health inaugurating the Vaccination Week at Port Moresby General Hospital in the presence of paediatricians, Department of Health officials and partners and the Paediatric Society -- reaffirming support for the EPI in the country -- Miss Papua New Guinea Humanitarian addressing the gathering at the Port Moresby General Hospital, newspaper and radio campaigns before and during Vaccination Week and provincial governors and administrators launching ceremonies.

#### *Update on Global Immunization Vision and Strategy and Decade of Vaccine (DoV)*

Dr Lidija Kamara from Headquarters gave an overview of the current situation and the Decade of Vaccines Collaboration (DoVC) and an update on the development of the Global Vaccine Action Plan (GVAP).

WHO, UNICEF, the National Institute of Allergy and Infectious Diseases (NIAID) and the Bill & Melinda Gates Foundation established the DoVC to create a GVAP for implementation and form a collaborative structure to engage diverse stakeholders in response to Bill and Melinda Gates' call in January 2010 for a "Decade of Vaccines" — including a pledge from their foundation to commit US \$10 billion over the next 10 years to help research, develop and deliver new vaccines for the world's poorest countries.

New vaccines are ready for country immunization programmes: Meningitis A, cervical cancer, pneumonia, and diarrhoea. Excellent candidate vaccines are in the pipeline to fight malaria, HIV and tuberculosis. National governments are prioritizing vaccines in health strategies; governments have dedicated more resources to immunizing their citizens.

The DoVC is a time-limited consultation process to develop GVAP 2011–2020. From May 2011, the DoVC will undertake a consultation process, engaging a wide range of stakeholders on a number of policy, economic, health, delivery and epidemiological issues and challenges related to how to best use vaccines. To ensure a diversity of views, individuals and organizations will be invited to participate in a series of in-person and online consultations to provide working groups with evidence and guidance in priority areas.

#### *Update on the Strategic Advisory Group of Experts (SAGE)*

Professor David Durrheim outlined the purposes, processes and products of SAGE and the work of SAGE during its last meeting in April 2011. SAGE is the principal advisory group to WHO for vaccines and immunization (from research to delivery and linkages with other health interventions, covering all vaccines and all age groups). SAGE reports directly to WHO Director-General and involves in its work all relevant WHO departments.

The 15 members are appointed by the WHO Director-General and sign a declaration of interest. SAGE has seven working groups and meets twice a year (in April and November). During its meeting in April 2011, SAGE reviewed global progress in immunization, the status of the implementation of recommendations previously made and regional update reports. SAGE also reviewed reports from other immunization advisory committees such as the Advisory Committee of the Initiative for Vaccine Research, the Global Advisory Committee on Vaccines Safety and the GAVI Alliance.

SAGE discussed specific topics such as pandemic and seasonal influenza vaccines, tick-borne encephalitis and meningococcal meningitis vaccine, rubella vaccination immunization

schedules, global poliomyelitis eradication, an update of the evidence-based review process and grading of the quality of scientific evidence cholera vaccine.

### 2.7 Partnership – Interagency Coordinating Committee (ICC) Meeting

After the substantial reduction in partner funding in 2008, the Region has been able to address basic regional needs continually because of the generous contribution and commitment of existing donors. However, funding gaps exist in critical areas to support priority countries. ICC members committed to continue their level of support technically and financially but finding new donors has been challenging, especially with the current global financial crisis.

The Western Pacific Regional Office is working with country offices and partners to identify sources to cover the anticipated funding gaps and fully meet the financial needs on targeted diseases. However, the resource requirements for 2012 are significantly higher than the expected resources. As new vaccines become available, the need to support surveillance systems for all VPDs becomes more difficult. Finding skilled personnel and financial support at the country level will continue to be a challenge to address all needs beyond the basics.

## 3. CONCLUSIONS

The main conclusions of the meeting were as follows:

### 3.1 General

The Western Pacific Region entered the second decade of the 21st century with continued regional progress towards achieving immunization goals, including strengthening immunization systems, achieving measles elimination and the hepB control milestone by 2012, completing MNTE, maintaining poliomyelitis-free status and accelerating introduction of new and underutilized vaccines.

Major global immunization goals and targets can be accomplished successfully. There is great utility in establishing and monitoring such regional goals to focus attention on major immunization priorities, the technical and programmatic requirements to address these priorities and the human and financial resource mobilization required. However, achievement of current regional goals and targets is facing critical challenges in several countries.

The TAG meeting was an opportunity to review regional and country progress. Countries can learn from each other's experiences and challenges. The TAG works out and can share advice with countries and the Western Pacific Regional Office on recommended actions to improve programme performance and enhance progress towards achieving regional goals and targets. The ultimate goal of this process is to protect more children and adults against VPD, disability and death.

### 3.2 Measles elimination

The Region is making good progress towards measles elimination and achieving the goal in all countries is feasible provided political and financial commitments support the activities that must be undertaken. Only 16 550 measles cases (18.3 per million population (annualized) were reported in the Region from January to June 2011, a considerable reduction from the 48 484

cases (27.0 per million population) in 2010, 61 297 in 2009 (34.0 per million) and 145 949 (81.6 per million) in 2008.

The TAG appreciates the intensive and successful efforts of the many countries conducting SIAs in the latter half of 2010 and 2011 that have contributed to this decrease, including those in Papua New Guinea (from June 2010 to July 2011), China (September 2010), Viet Nam (from September to November 2010), Cambodia (from February to April 2011) and the Philippines (from April to June 2011). The Lao People's Democratic Republic was to conduct an SIA targeting people nine months old to 19 years old from November to December 2011.

Routine immunization coverage has also improved. WHO estimates of regional MCV1 coverage were 97% in 2010 compared with 96% and 95% in 2009 and 2008, respectively. MCV2 was included in the routine immunization schedule of 32 countries and areas, with regional coverage reported at 91%. Surveillance performance improved from January to June 2011 compared with prior years.

The discarded measles case rate was 3.0 per 100 000 population (target  $\geq 2.0$ , and up from 2.6 in 2010), and blood specimens were collected from 71% of suspected measles cases (target  $\geq 80\%$ , and up from 68% in 2010). Virus detection and molecular analysis are occurring in more countries and areas and the number of cases with genotype data is increasing in several countries, including Japan, Malaysia, New Zealand and the Republic of Korea.

Nevertheless, no country should become complacent. High levels of two-dose measles vaccination coverage through routine and/or supplementary immunization are necessary to limit or interrupt transmission of measles virus until the virus is eradicated globally.

Further progress will require recognition of and action to mitigate immunization gaps. Geographic and social disparities in immunization programme access and utilization exist in several countries. Strategies to reach every community and child (rather than every district) include specific community- and child-focused strategies that are being conducted in Cambodia, the Lao People's Democratic Republic, Papua New Guinea and the Philippines.

Despite the high reported coverage from SIAs, residual chains of measles virus transmission may be identified afterwards in remote geographic areas, as occurred in Viet Nam, or in age groups not targeted by the SIA, as in Cambodia. The TAG is concerned that remaining immunity gaps among older age groups in Cambodia threaten measles elimination efforts in that country.

Current administrative coverage data may not be accurate and actual coverage may be lower than reported coverage. Coverage monitoring tools such as rapid coverage or convenience assessments have been used extensively during the recent SIAs in Cambodia, Papua New Guinea and the Philippines to identify missed children at the community level and also may be used to monitor routine EPI coverage.

Epidemiologic data from an increasing number of countries, such as China, Malaysia, the Republic of Korea (in 2007) and Singapore, suggest that infants less than 9 months old represent a substantial proportion of reported measles cases. This could be an indication of increasing vulnerability to measles infection at younger ages that paradoxically would result from health system improvements.

Well-functioning immunization programmes result in fewer mothers with natural immunity to measles that confer low levels or no maternal antibody to their newborn infants.

Improved health care access results in increased risk of nosocomial transmission after infected cases of any age are brought to health facilities during the prodrome or shortly after rash onset and infect susceptible infants and children.

In addition, some countries that administer MCV2 at six or seven years old (e.g. Malaysia, Singapore) have reported a high proportion of cases among children 1-5 years old. The WHO position paper on measles vaccine (WER 2009; 84:349-360) notes that in countries with low measles transmission (that is, those that are near elimination) and where MCV1 is administered at age 12 months, the optimal age for delivering routine MCV2 is based on programmatic considerations that achieve the highest coverage of MCV2 and, hence, the highest population immunity.

Administration of MCV2 at age 15–18 months ensures early protection of the individual, slows accumulation of susceptible young children and may correspond with other routine immunizations (for example, a DTP booster).

Further progress towards measles elimination also will require addressing surveillance gaps at the subnational level. Only 34% of second-level administrative units have reported at least one discarded measles case per 100 000 population. Regionally, the method of measles confirmation in the first half of 2011 was by clinical criteria for 51% of confirmed cases and only 1% are confirmed by epidemiologic linkage.

As countries approach measles elimination, case classification becomes more complex as a greater percentage of immunoglobulin M (IgM) positive cases may be falsely positive. In addition to standard clinical and laboratory criteria, additional criteria such as the duration and nature of rash, magnitude of fever, clinical course of disease, etc., may be used as additional evidence to confirm or discard measles. Expert review committees, such as those used for poliomyelitis, may be needed.

Moreover, collection of specimens for virus detection and molecular analysis (e.g. throat swabs) are becoming critically important to track the migration of viruses and help assess whether new cases are imported, import-related or vaccine-associated.

At the 61st Regional Committee Meeting in October 2010, Resolution WPR/RC61.R7 urged the Member States "to establish an independent national verification process for measles elimination following the establishment by the WHO Regional Office for the Western Pacific of standardized regional verification mechanisms" and requested the Regional Director "to establish regional verification mechanisms for measles elimination."

Separately, a regional Technical Consultation on the Verification of Measles Elimination in the Western Pacific Region was held in June 2010 in which partners and representatives from eight Member States participated. The outcome of the consultation included guiding principles, structure, function, components and proposed indicators of verification for the Western Pacific Region. The participants of the consultation recommended considering various types of evidence to verify measles elimination in different countries.

### Recommendations

(1) The general recommendations from TAG 19 remain valid. In regard to establishing a regional verification mechanism, the TAG urges the Regional Director to form an independent RVC as soon as possible in accordance with the 2010 Regional Committee Resolution WPR/RC61.R7. Once formed, the RVC may want to carefully review the proceedings, conclusions and recommendations of the June 2010 Technical Consultation for the Verification

of Measles Elimination in the Western Pacific Region and, in consultation with countries and areas of the Region, develop processes for verification of measles elimination, including the RVC's terms of reference, verification guidelines, and working criteria for verification.

As variation exists in measles elimination status across the Region, the RVC may want to include assessments of progress towards measles elimination in its terms of reference. In view of the 2010 Regional Committee resolution and 2010 Regional Consultation recommendations, the TAG recommends that the RVC consider various types of evidence in verifying measles elimination in different countries (e.g. a province-by-province approach in very large countries).

Such evidence would include both quantitative data and a qualitative, historic review of epidemiologic and virologic trends as well as programmatic performance. During this process, the RVC will continue to draw upon the experiences and lessons learnt from the Pan American Health Organization in addition to the plans and approaches being implemented by the RVCs of the Eastern Mediterranean Region and the European Region.

(2) As described in "Monitoring Progress Towards Measles Elimination" (WER 2010; 85:490-495), the TAG affirms the definition of measles elimination as the absence of endemic measles virus transmission for at least one year. Measles incidence is a useful measure for monitoring progress towards measles elimination. However, attaining measles incidence of <1 per million population is not a requirement for elimination as imported and import-related cases may occur at levels corresponding to a higher incidence rate.

(3) Countries may want to make extra efforts to improve measles and rubella surveillance sensitivity (i.e. at the subnational level) and improve the quality of case investigations, including collection of all core variable data, adequate confirmatory sample collection and testing, contact tracing, proper case classification and collection of samples for virologic testing (e.g. throat swabs).

(4) Surveillance data quality and content may be analysed and used regularly at national and subnational levels in all countries. This is particularly important to identify residual areas of virus transmission and appropriately target outbreak response immunization or mopping up activities, including after SIAs.

(5) Recognizing the impressive progress made towards achieving the regional measles elimination goal in the Western Pacific Region, the TAG recommends that countries may want to be prepared to control measles outbreaks in emergency settings and may want to develop national measles outbreak preparedness and response plans and identify sources of funding to enable a comprehensive and timely response to measles outbreaks, according to the updated guidelines on "Response to measles outbreaks in measles mortality reduction settings".

(6) In the setting of outbreaks, timely reporting, investigation and appropriate isolation of suspected measles cases may be conducted and vaccination of infants 6–11 months old against measles may be considered.

(7) The TAG suggests that countries with demonstrated immunity gaps in pre-school and school-age children ensure MCV1 immunization as early as the national schedule will allow and consider adjusting the timing of the administration of MCV2 (MR or MMR), preferably between 15-24 months old, to reduce the accumulation of susceptible children over time. Regardless of the strategy or schedule followed, children may be screened for their measles vaccination history at the time of pre-school or primary school entry and those lacking evidence of receipt of two doses may be vaccinated.

- (8) Recognizing an increasing role of adults in measles virus transmission in some countries, the TAG recommends that countries routinely may want to ensure protection of those at high risk. This group includes students, migrant workers, military recruits, health care workers and employees in the travel and tourism industry (e.g. transport workers, hotel and resort workers, etc.). Additional study may be useful to better define routes of measles virus transmission among adults.
- (9) Countries may want to ensure cooperation with other sectors, such as education, local community and media, especially in light of increasing parental concern about vaccination safety. Countries should promote the fact that the benefit of immunization far outweighs potential side-effects.
- (10) To protect the results from their recent SIA, Cambodia may want to consider expanding the target age and geographic scope of its planned SIA beginning 31 October 2011 to include at a minimum districts where measles virus transmission is continuing. Accelerated introduction of RCV through a wide age range SIA in 2012 would be an important additional strategy for Cambodia as well as other countries to more definitively address measles susceptibility among older children, adolescents and adults while also accelerating control of rubella transmission and the risk of CRS.
- (11) The TAG agrees with Papua New Guinea's plan to conduct its 2012 SIA within three to four weeks. The TAG recommends that government authorities use restructuring opportunities to strengthen immunization services and VPD surveillance management. The TAG encourages the Lao People's Democratic Republic to ensure at least 95% coverage among people targeted in the MR vaccine SIA in November 2011 and to intensify surveillance to identify and eliminate any residual areas of measles virus transmission.

### 3.3 Rubella control

Rubella affects countries unequally in the Western Pacific Region. Those that have had universal RCV immunization for decades have high levels of control while others that have not yet or only recently introduced RCV remain highly endemic. The CRS disease burden is underreported and underrecognized in many countries in the Region.

Awareness of rubella and CRS is increasing, particularly in the six countries that have not yet introduced RCV into national immunization programmes. Four of those six countries (Cambodia, the Lao People's Democratic Republic, Papua New Guinea and Viet Nam) are taking actions to determine the disease burden of CRS and explore sustainable strategies to introduce RCV.

The new WHO position paper on rubella provides countries new guidance on RCV use. In the position paper, WHO recommends that countries use the opportunity provided by accelerated measles control and elimination activities to introduce RCV. All countries that have not yet introduced RCV and are providing two doses of measles vaccine through routine immunization and/or SIAs may want to consider the inclusion of RCV in their immunization programmes. To avoid the potential increased risk of CRS, countries may want to achieve and maintain immunization coverage of 80% or greater with at least one dose of RCV delivered through routine services or regular SIAs, or both.

### Recommendations

- (1) The TAG welcomes the recently published WHO position paper on rubella vaccine (July 2011) and the new guidance that it provides on expanded introduction and use of RCV and recommends that countries and areas adapt their policies accordingly.
- (2) The TAG recommends that the six countries that have not yet introduced RCV may want to take steps to introduce the vaccine. Their introduction plans may include raising awareness among policy-makers and relevant professional societies, explore actionable strategies to integrate RCV into their national immunization programmes and identify mechanisms to financially sustain its use.
- (3) Based on the revised WHO position paper on rubella vaccine, the TAG recommends the following strategies to use RCV (MR or MMR) to accelerate rubella control:
  - (a) Countries should use opportunities afforded by the two-dose measles vaccination strategy recommended by WHO to provide RCV.
  - (b) The preferred approach is to begin with RCV in a wide age-range campaign, targeting age groups predominately affected, followed immediately with the introduction of RCV in the routine programme. As with all SIAs, appropriate AEFI surveillance should be in place.
  - (c) All subsequent follow-up campaigns may want to strongly consider use of RCV.
  - (d) The first dose of RCV can be delivered at nine months or 12 months old (eight months old age in China) in accordance with the existing national immunization schedule for measles vaccine.
  - (e) All subsequent follow-up campaigns may want to use RCV.
  - (f) Countries introducing RCV may want to achieve and maintain immunization coverage of 80% or greater with RCV delivered through routine services and/or regular SIAs.
  - (g) Countries may want to provide RCV together with MCV and hepB vaccine to all health care workers, where possible.
- (4) In considering accelerated introduction of RCV through SIAs that target wide age groups, countries and partners also may want to consider the added benefits of definitively addressing residual measles susceptibility among adolescents and adults as part of the Region's efforts to eliminate measles.
- (5) The TAG suggests that countries with concerns about susceptibility to rubella among CBAW based on age distribution of rubella cases, CRS surveillance or other evidence identify effective solutions to protect the respective population group and mobilize the resources required for this purpose. Ideally, such efforts can be combined with increasing population immunity against measles among susceptible adolescents and adults.
- (6) The TAG encourages countries that have not yet established CRS surveillance to do so when possible, with technical support from WHO and partners, and by applying lessons learnt from CRS surveillance pilot projects and from other countries with existing CRS surveillance

(7) Countries may want to provide sufficient RCV availability to ensure uninterrupted routine and supplementary immunization (when planned). Countries that manufacture RCV may want to ensure sufficient production capacity to meet the national immunization programme needs.

(8) The TAG reaffirms 2015 as the operational target year to achieve the targets of rubella control (<10 rubella cases per million population) and CRS prevention (<10 CRS cases per million live births) in the Western Pacific Region, as stated in the 2009 TAG 18 recommendations.

(9) GAVI-eligible countries may want to be prepared for potential submission of rubella-containing vaccine applications in 2012, including for implementation of a large-scale SIA as the preferred approach to RCV introduction.

### *Hepatitis B control*

The Region has made important progress in hepB control. Estimates based on the 2007 birth cohort suggest that the regional milestone of reducing chronic infection rates to <2% among children at least 5 years old has likely been achieved; 27 countries are likely to have reached the 2012 milestone. The nine countries that have not met the recommended immunization targets challenges with fully implementing birth dose vaccination in health facilities and vaccinating newborn infants delivered without skilled professionals.

Countries are largely interested in conducting seroprevalence surveys to monitor impact, guide programmes or provide data for the verification of hepB control. Progress has been made in the verification process and in the numbers of countries requesting verification. Lack of funding is a barrier to making gains in the most difficult countries and conducting seroprevalence surveys.

### Recommendations

(1) The TAG is pleased that the 2012 <2% milestone is likely to be achieved regionally and by at least 27 countries. With this progress, the TAG requests that the HepB ERP propose the target year for the <1% goal that was adopted during the 2005 Regional Committee Meeting. This should be done by early 2012 in time for endorsement by the TAG and inclusion in the 2012 Regional Committee Meeting.

(2) In the year preceding the 2012 hepB milestone, the TAG urges priority countries and the Region to commit resources and attention to improving birth dose and three-dose vaccination coverage. Specifically:

(a) Maximize birth dose coverage among facility births by assessing and ensuring birth dose implementation in health facilities.

(b) Collaborate with MCH programmes to maximize birth dose coverage among births delivered at home by skilled birth attendants (SBAs) and to explore strategies for reaching newborn infants not delivered by SBAs.

(c) Strengthen recording and reporting of birth dose vaccination, especially distinguishing vaccine given within 24 hours of birth.

(3) The TAG endorses the ERP recommendations from their February 2011 meeting, including:

- (a) The following countries and areas may want to conduct hepB serosurveys in the next 12 months to assess chronic infection rates among vaccinated cohorts: Cook Islands, French Polynesia, Guam, the Federated States of Micronesia, New Caledonia, Niue, Nauru, Tokelau, Tuvalu and Wallis and Futuna.
- (b) The following countries may want to begin verification of achieving regional targets in the next 12 months: American Samoa, Australia, China, Fiji and New Zealand. In addition, final results from the Mongolia national serosurvey also suggest readiness for verification.
- (4) Funding constraints have been a deterrent to progress. Given GAVI's successful pledging meeting in June 2011, the Western Pacific Regional Office should pursue the possibility of restarting GAVI's funding for monitoring the impact of their investment in hepB control along with support for increasing birth dose coverage in GAVI countries.

#### 3.4 Maintaining poliomyelitis-free status

The TAG concurs with the conclusion of the RCC on the poliomyelitis-free status of the Region and likewise considers having been certified poliomyelitis-free for 10 years a remarkable achievement.

The TAG regards the continuing risk assessment on the potential of imported WPV to spread and cause poliomyelitis outbreaks as critical and is impressed with the various risk mitigation activities carried out.

However, the TAG also notes with great concern that surveillance performance levels in some countries remain at very low levels or are declining and that still not every country has an updated and fully endorsed WPV importation preparedness plan in place.

The TAG congratulates the China CDC and the WHO Regional Offices involved (Western Pacific, South-East Asian, European and Eastern Mediterranean) for organizing the coordination workshop among poliomyelitis-free countries and regions "Securing the gains: How international collaboration can protect poliomyelitis-free areas" in Urumqi, Xinjiang, China in July 2011. The TAG finds it impressive that China, India, Kazakhstan, Kyrgyzstan, Mongolia, Myanmar, Nepal, Pakistan, the Russian Federation, Tajikistan, Uzbekistan and Viet Nam jointly identified in this meeting various options for closer cross-border and other collaboration mechanisms for becoming poliomyelitis-free and maintaining poliomyelitis-free status.

#### Recommendations

- (1) The TAG supports the RCC request that all countries may want to do their own risk assessment exercise and particularly at the subnational level, as appropriate. The TAG would like to receive the results of these risk assessments submitted to the next RCC meeting. Based on these risk assessment results, periodic preventive SIAs, ideally in combination with other interventions, should be conducted if indicated.
- (2) The TAG again urges all countries that they may want to ensure that an updated and adequately endorsed WPV importation preparedness plan is in place, as appropriate, and submit copies to the RCC.
- (3) The TAG reminds the WHO Secretariat to also update the response plan of the Regional Office.

- (4) The TAG encourages all countries and partners involved in the Urumqi meeting to explore how the recommendations and action points from the meeting can be implemented in a rapid, practical and collaborative manner and continued intercountry dialogue maintained. The results of this meeting should be widely disseminated and similar such meetings be convened as appropriate.
- (5) Otherwise its recommendations made at the 19th TAG meeting remain valid.

### 3.5 Vaccine preventable diseases laboratory networks

#### *Poliomyelitis, measles/rubella and JE*

VPD laboratory networks have given valuable support to achieve regional measles elimination, to maintain poliomyelitis-free status and to support JE control efforts by providing high-quality laboratory data from network laboratories in the Region. The TAG welcomes the efforts to integrate and learn from the pre-existing model of poliomyelitis and measles/rubella laboratory networks in the establishment of new vaccine laboratory networks, including JE, IBD and rotavirus. The TAG expresses concern about the funding gap to support laboratory activities in priority countries.

#### Recommendations

- (1) Recommendations from the second VPD Laboratory Networks Meeting, including the ones for the poliomyelitis and measles/rubella laboratory networks, are valid.
- (2) For the JE laboratory network, the TAG recommends that the Western Pacific Regional Office continue to strengthen the quality of the network laboratories through annual accreditation according to WHO guidelines. The TAG also encourages the Western Pacific Regional Office to work with the South-East Asian Regional Office to share current laboratory data regularly among the two Regional Offices and participating Member States, considering the common goals and challenges in implementing laboratory-based JE surveillance.
- (3) Recognizing the critical and expanding roles of VPD laboratory networks, the TAG strongly urges the Western Pacific Regional Office to pursue all possible ways to fill the funding gap, in collaboration with partners and donors.

### 3.6 Maternal and neonatal tetanus elimination

The TAG notes the continued progress towards MNTE in all countries concerned and how collaboration of EPI with other health programmes such as MCH and nutrition can benefit improvements in health systems. In particular, the approach taken in China offers valuable lessons regarding not only this collaboration but also demonstrates other parts of the health sector, including health care reform (e.g. subsidy for hospital delivery) being used to achieve the MNTE goal.

#### Recommendations

The TAG considers its recommendations made at the 19th TAG meeting still valid and particularly emphasizes the value and potential synergies among EPI, MCH and other related health programmes.

### 3.7 Routine immunization programme

Routine immunization is the foundation of VPD control and elimination efforts. The TAG considers essential high-quality routine immunization with high coverage. The TAG recognizes that due to the diversity, particularly in developmental status, among countries in the Western Pacific Region, different practices in implementing immunization strategies exist.

The TAG notes the work being conducted by the WHO Secretariat (mainly based on review and analysis of WHO-UNICEF JRF data) to categorize countries into three main groups accordingly as described in the respective section of the body of the meeting report.

Group A: Routine immunization with two doses of MCV

+ School-entry immunization requirement or recommendation

Group B: Routine immunization with two doses of MCV

+ School-entry immunization check/School-based Immunization

+ Mass vaccination campaigns

Group C: Routine immunization with one dose of MCV

+ Mass vaccination campaigns

+ "Reach Every District" approach

| Group | Routine Immunization |              |     | SIAs |
|-------|----------------------|--------------|-----|------|
|       | MCV                  | School-entry | RED |      |
| A     | 2                    | +            |     |      |
| B     | 2                    | +            |     | +    |
| C     | 1                    |              | +   | +    |

During this TAG meeting, multiple excellent examples of different implementation work in countries were presented and offer valuable lessons about how to identify the key challenges and work out appropriate solutions to strengthen ultimately routine immunization systems.

China, Japan, Malaysia, the Republic of Korea and Viet Nam reported about the implementation of school-entry immunization requirements, checks and recommendations or school-based immunization and its impact on improving routine immunization coverage at school entry and subsequent acceleration and maintenance of measles elimination.

China, Cambodia and the Lao People's Democratic Republic have been making efforts on identification of high-risk areas and populations to strengthen routine immunization service at the subnational level. These include:

- (1) Conducting annual district risk assessment followed by high-risk area mop-up vaccination (Guangxi Province, China).
- (2) Using a national EPI review, SIA and MNTE risk assessment to identify a high-risk community (Cambodia).
- (3) Working with WHO in developing an assessment tool for district EPI performance (the Lao People's Democratic Republic).

Mongolia and Papua New Guinea emphasized how implementation and expansion of "RED and "Reach Every Child"(REC)" initiatives, respectively, result in improving routine immunization services at the subnational level and/or for high-risk areas and populations identified.

#### Recommendations

- (1) The TAG reaffirms that increasing and maintaining routine immunization coverage to reach the global and regional vaccination targets remains essential for all VPD control goals. The TAG reminds all stakeholders that in order to be assured of reported achievements in terms of disease control, data quality and reliability need to be taken into consideration when assessing vaccination coverage.
- (2) The TAG welcomes the work initiated by the WHO Secretariat on grouping countries according to current implementation patterns of immunization strategies. The TAG recommends further exploration of the validity and usefulness of such classification.
- (3) In terms of consolidating risk assessment approaches, the TAG encourages the WHO Secretariat to further explore how the recent pilot work with the Lao People's Democratic Republic in developing an assessment tool for district EPI performance also could be adapted and applied in other countries. Developing the draft tool further with other countries not only would indicate if there is a potential for a standardized tool but also would build ownership that would be essential for wider use and benefits.
- (4) The TAG strongly encourages all countries to foster the creation and maintenance of an effective NITAG or its equivalent to support evidence-based immunization policy at the country level.
- (5) The TAG would like the WHO Secretariat to work out avenues regarding how countries' lessons learnt and good practises developed on strengthening various components in routine immunization programmes can be shared further and disseminated. This should include but not be limited to:
  - (a) introduction and enforcement of school-entry immunization check;
  - (b) recommendations on a school-based immunization programme at entry to primary school; and
  - (c) advocacy with parents and communities on the benefits of immunization (e.g. through further working on annual national immunization weeks).

(6) To facilitate implementation, the TAG recommends collaboration with other programmes and sectors.

(7) The TAG encourages countries to work with MCH/health system programmes for mutual synergies and to seek possible funding support under the Health System Funding Platform (HSFP) from the GAVI/Global Fund.

(8) The TAG 19 recommendations to WHO remain valid.

### 3.8 Vaccine, cold chain and logistics

Over the past two decades, countries in Western Pacific Region have expanded the cold chain in immunization programme. Many donors (e.g. the Japan International Cooperation Agency (JICA), AusAID, UNICEF, Luxembourg and Germany's GIZ) also have given substantial support to low- and middle-income countries for cold chain expansion. However, countries may want to assess regularly on the status of cold chain equipment.

The TAG had provided recommendations in July 2009 on cold chain inventory, maintenance and replacement, which still remain valid. Efforts should be continued to operationalize this recommendation.

#### Recommendations

Countries regularly may want to review and update their cold chain inventory and formulate comprehensive strategies to provide preventive maintenance, repair or replacement of cold chain equipment. The TAG provided a recommendation in July 2009 on cold chain inventory, maintenance and replacement, which still remains valid. Efforts should be continued to operationalize this recommendation.

### 3.9 Immunization safety

Ensuring immunization safety is an essential component for EPI and its importance will continue to grow in this century with the introduction of new vaccines and disease eradication, elimination and control goals. To strengthen the monitoring of immunization safety is more critical when vaccines are being introduced and administered in large populations.

A high-quality AEFI surveillance system is an important part of immunization safety, contributing vaccine quality assurance as well as maintaining a high quality EPI by identifying programme errors and addressing community concerns regarding vaccination.

#### Recommendations

(1) The TAG encourages all countries to emphasize the importance of immunization safety practises for maintaining high-quality immunization services.

(2) All Member States may want to strengthen their AEFI surveillance system, especially when:

- (a) new vaccines are being introduced; and
- (b) vaccines are administered in large populations (e.g. SIAs).

(3) The Western Pacific Regional Office should formulate a regional cooperation mechanism for strengthening the capacity of an AEFI surveillance system, including causality assessment.

(4) The TAG recommends that all countries develop a method of rapid proactive authoritative risk communication that includes the need for procedures and staff training. To facilitate implementation by countries, the TAG requests that the Western Pacific Regional Office provide appropriate technical support to respond on a timely basis.

### 3.10 National regulatory authorities

Ensuring vaccine quality and safety is an essential component of EPI. An independent, competent and effective regulatory system of a country can support assured quality vaccines. Countries may want to strengthen the functions of the NRA with regard to their vaccine source. All Member States recognize the necessity of having an NRA that functions according to WHO guidelines. The NRA also can play a leading role in contributing to immunization safety, particularly through its role in licensing and AEFI surveillance. For countries introducing new and underutilized vaccines, the NRAs should at a minimum have the capacity for licensing and post-marketing surveillance, including high-quality AEFI surveillance.

#### Recommendation

The Western Pacific Regional Office may want to strengthen regional NRA cooperation by fostering a regional NRA alliance for using limited resources efficiently and providing support to NRAs on request.

### 3.11 Vaccination Week

The first Vaccination Week in the Region has proven to be a successful tool to highlight the importance of vaccination and raise community awareness about vaccination services available at country national and district levels.

#### Recommendation

The TAG continues to endorse the implementation of Vaccination Week and encourages all Member States in the Region to participate in this important event. The TAG requests WHO to explore working out an overall theme for the 2012 event in consultation with countries.

### 3.12 Introduction of new vaccines and technologies

Over the last five years, significant progress has been made in the introduction of new and underutilized vaccines in the Western Pacific Region, and this is expected to lead to substantial reductions in morbidity and mortality from VPDs. However, most low- and middle-income countries have not yet been able to introduce new vaccines other than Hib.

Support for decision-making and vaccine prioritization processes is needed as the number of available vaccines continues to increase. New vaccines bring new programmatic challenges on issues such as vaccine presentation and packaging, vaccination schedules, storage and transport. Awareness of these issues is important so they can be addressed as countries prepare to introduce these vaccines. Although prices have fallen, cost remains a critical barrier to full adoption of these vaccines, especially for middle-income countries.

### Recommendations

- (1) When preparing to introduce new vaccines, countries may want to assess programmatic needs for the introduction and formulate an action plan to address gaps in all areas, including supply chain management, storage and transport capacities at all levels, safe injection and waste disposal practises, communications strategies, AEFI surveillance and vaccine effectiveness monitoring.
- (2) Countries that have introduced new and underutilized vaccines may want to conduct implementation evaluations using available tools. Gaps and lessons learnt may be documented and used for future new vaccine introduction. The impact of vaccine introduction may be monitored and the results shared with policy-makers to maintain support for vaccine use.
- (3) As countries consider the introduction of increasing numbers of new and underutilized vaccines, especially in the context of the potential expansion of GAVI support in 2012 to HPV, JE, rubella and typhoid vaccines, the TAG requests WHO to provide technical support for the use of surveillance and other data in increasingly complex vaccine introduction decision-making and prioritization processes. There is a clear role for the NITAG (or other advisory bodies) in these processes, and the WHO guidelines for new vaccines are relevant reference material.

#### 3.13 Surveillance for diseases targeted by new and underutilized vaccines and decision-making for new and underutilized vaccines

Substantial progress has been made in standardizing and strengthening the quality of rotavirus and invasive bacterial (IB) VPD surveillance, including laboratory networks, and in consolidating this surveillance under ministries of health. Further work in each area is needed to achieve robust surveillance systems, which can be sustained with minimal external support and which provide high-quality data for vaccine introduction decision-making and assessment of vaccine impact.

Strengthening of the laboratory networks will require the designation of national laboratories and implementation of defined standards to assess these laboratories. IB VPD surveillance will be increasingly important in the next several years to document the impact of Hib and PCV vaccine introductions. Surveillance for other diseases targeted by new and underutilized vaccines will be important to guide the use of these vaccines as they become increasingly available and the use of surveillance and other data in complex decision-making processes requires further analysis and support.

### Recommendations

- (1) Rotavirus and IB VPD surveillance may be standardized further and strengthened to ensure the availability of high-quality data for decision-making and vaccine impact assessment and may be consolidated further under ministries of health as part of the national surveillance system to promote sustainability and use of the data for decision-making. Countries may want to designate national rotavirus and IB VPD laboratories to support the surveillance networks.
- (2) As countries consider the use of additional new and underutilized vaccines, such as for cholera, HPV, JE, rubella and typhoid, technical and financial support can be provided for surveillance to guide use of these vaccines and for monitoring to assess vaccine impact.

### 3.14 Japanese encephalitis prevention and surveillance

Significant progress has been made in the implementation of JE surveillance and the introduction of JE vaccine in endemic countries. Surveillance data from Cambodia has led to pilot vaccine introduction and data from the Lao People's Democratic Republic and the Philippines are being used to make vaccine introduction decisions. However, data from additional geographic areas in the Lao People's Democratic Republic and the Philippines are needed to determine the full extent of the at-risk populations.

Intensified surveillance or special studies are needed to measure the impact of JE vaccination in Viet Nam and China where vaccination programmes are well established at the national or nearly national level. There is currently no WHO prequalified JE vaccine and this remains a barrier to vaccine introduction in some countries. However, potential GAVI support in 2012 should facilitate vaccine uptake by recently documented endemic countries.

#### Recommendations

- (1) The TAG requests WHO to support countries with limited JE data in further strengthening JE surveillance and in using surveillance data to support informed decision-making on vaccine introduction and target populations. TAG requests WHO to support countries with established JE vaccination programmes to improve JE surveillance and collect data through surveillance or special studies to measure the impact of these vaccination programmes.
- (2) As stated in the WHO position paper, JE vaccine should be introduced in all areas where JE constitutes a significant public health problem. Countries may want to use available data to define target populations and may want to identify resources and mechanisms for vaccine introduction. GAVI-eligible countries where JE vaccine introduction is indicated may want to prepare for potential JE vaccine applications in 2012.

**TWENTIETH MEETING OF THE TECHNICAL ADVISORY GROUP ON IMMUNIZATION  
AND VACCINE PREVENTABLE DISEASES IN THE WESTERN PACIFIC REGION  
Manila, 9-12 August 2011**

English only

**TIMETABLE**

| Time      | Tuesday, 09 August 2011   | Time      | Wednesday, 10 August 2011  | Time      | Thursday, 11 August 2011   | Time      | Friday, 12 August 2011   |
|-----------|---|-----------|--|-----------|--|-----------|--|
| 0800-0830 | <b>REGISTRATION</b>   | 0900-1000 | <b>2.5 Ensuring on-time HepB birth dose: challenges and options:</b>   | 0900-1030 | <b>4. Certification/verification/validation process</b>  | 0800-1000 | <b>8. Drafting conclusions and recommendations</b>                       |
| 0830-0900 | <b>1. Opening</b> <ul style="list-style-type: none"> <li>Opening speech</li> <li>Self-introduction</li> <li>Election of officers: Chairperson, Vice-Chairperson and Rapporteur</li> <li>Administrative announcements</li> </ul>   | 1000-1030 | <b>2.6 Identify high-risk districts and populations and follow-up intervention</b> <ul style="list-style-type: none"> <li>Regional framework for polio risk assessment</li> <li>Introduction of WHO-UNICEF MNTE District Risk Assessment Tool</li> </ul>   |           | <ul style="list-style-type: none"> <li>Polio eradication and sustaining poliomyelitis-free status</li> <li>Measles elimination: Regional overview</li> <li>Measles elimination: Australia's experience in measles elimination and its verification</li> <li>HepB Control</li> <li>MNTE: China's experience towards validation</li> <li>Q&amp;A and discussion</li> </ul> |           | <b>9. Partnership – Interagency Coordinating Committee (ICC) Meeting</b> |
| 0900-0930 | <b>GROUP PHOTO AND COFFEE BREAK</b>   | 1030-1100 | <b>COFFEE BREAK</b>  | 1030-1100 | <b>COFFEE BREAK</b>  | 1000-1030 | <b>COFFEE BREAK</b>  |
| 0930-1030 | <b>2. Immunization strategies</b><br><b>2.1 Global overview:</b> potential impact of the global immunization initiatives on regional and national immunization programmes <ul style="list-style-type: none"> <li>Global Polio Eradication Initiative</li> <li>Regional Measles Elimination Initiatives and Global Measles Eradication</li> <li>Maternal and Neonatal Tetanus Elimination (MNTE): The new equity framework</li> <li>Q&amp;A</li> </ul> | 1100-1200 | <ul style="list-style-type: none"> <li>Lao People's Democratic Republic - Application of the Tool and its impact</li> <li>Cambodia - Identification of high-risk communities based on MNTE, National Expanded Programme on Immunization (EPI) review and SIAs</li> <li>WPRO District EPI/VPD Risk Assessment Tool</li> <li>Q&amp;A and discussion</li> </ul> | 1100-1200 | <b>5. Immunization safety</b> <ul style="list-style-type: none"> <li>Regional overview on immunization safety</li> <li>Adverse events following immunization (AEFI) due to DTP in the Philippines and its impact on the immunization programme</li> <li>AEFI in Viet Nam and its impact on the immunization programme</li> <li>Q&amp;A and discussion</li> </ul>         | 1030-1230 | <b>10. Review draft conclusions and recommendations</b>                  |
| 1030-1230 | <b>2.2 Regional overview on immunization strategies:</b> goals, targets, progress and issues <ul style="list-style-type: none"> <li>Introduction</li> <li>Measles elimination</li> <li>Rubella control</li> <li>Sustaining poliomyelitis-free status</li> <li>Hepatitis B (HepB) control</li> <li>MNTE</li> <li>Routine immunization</li> <li>Q&amp;A</li> </ul>  |           |  |           |  |           |  |
| 1230-1330 | <b>LUNCH BREAK</b>  | 1200-1300 | <b>LUNCH BREAK</b>   | 1200-1300 | <b>LUNCH BREAK</b>   | 1230-1330 | <b>LUNCH BREAK</b>   |

|           |  |                            |  |                            |   |           |             |
|-----------|--|----------------------------|--|----------------------------|---|-----------|-------------|
| 1330-1515 | <b>2.3 Lessons learnt from the recent national measles resurgence</b> <ul style="list-style-type: none"> <li>• Viet Nam</li> <li>• Cambodia</li> <li>• Philippines</li> <li>• Malaysia</li> <li>• China</li> <li>• Q&amp;A and discussion</li> </ul>   | 1300-1345<br><br>1345-1500 | <b>2.7 Progress, impact and challenges of "RED" strategies</b> <ul style="list-style-type: none"> <li>• Mongolia</li> <li>• Papua New Guinea</li> <li>• Q&amp;A and Discussion</li> </ul><br><b>2.8 Summary on immunization strategies:</b> Critical challenges with and practical solutions for immunization strategies of countries in the Region for achieving the goals and targets set <ul style="list-style-type: none"> <li>• Lao People's Democratic Republic</li> <li>• Cambodia</li> <li>• Mongolia</li> <li>• Papua New Guinea</li> <li>• Q&amp;A and discussion</li> </ul> | 1300-1330<br><br>1330-1500 | <b>6. New vaccines and technologies</b><br><br><b>6.1 Surveillance for new VPDs: progress, current status, challenges and future</b> <ul style="list-style-type: none"> <li>• Invasive bacterial disease (IBD) surveillance and rotavirus surveillance</li> <li>• Laboratory networks for IBD and rotavirus</li> <li>• Q&amp;A and discussion</li> </ul><br><b>6.2 Introduction of new vaccines and technologies</b> <ul style="list-style-type: none"> <li>• Overview of challenges and lessons learnt in decision making processes and prioritization of new vaccines</li> <li>• Regional overview: Progress and programmatic challenges in introducing new vaccines in the countries of the Western Pacific Region (2010)</li> <li>• Country experience on pneumococcal conjugate vaccine (PCV) introduction (Singapore)</li> <li>• Regional update on National Regulatory Authorities (NRA) in the context of introduction of new vaccines</li> <li>• JE: Report on Bi-Regional JE Meeting</li> <li>• Q&amp;A and discussion</li> </ul> | 1330-1400 | 11. Closing |
| 1515-1545 | <b>COFFEE BREAK</b>  | 1500-1530                  | <b>COFFEE BREAK</b>  | 1500-1530                  | <b>COFFEE BREAK</b>   |           |             |
| 1545-1700 | <b>2.4 Options for preventing measles outbreak and sustaining measles elimination</b> <ul style="list-style-type: none"> <li>• Republic of Korea*</li> <li>• Japan*</li> <li>• Guangxi**/Guizhou*** provinces, China</li> <li>• Q&amp;A and discussion</li> </ul><br>* including school-based immunization<br>** including annual high-risk area intervention<br>*** strategic combination of supplementary immunization activities (SIA) and routine immunization programme strengthening | 1530-1615<br><br>1615-1700 | <b>3. Surveillance and Laboratory Network for Polio, and Measles and Rubella</b><br><br><b>3.1 Surveillance</b> <ul style="list-style-type: none"> <li>• Acute flaccid paralysis (AFP) surveillance</li> <li>• Measles and Rubella surveillance</li> <li>• Q&amp;A and discussion</li> </ul><br><b>3.2 Laboratory Network:</b> Progress, current status, challenges and future <ul style="list-style-type: none"> <li>• Polio Laboratory Network/Measles and Rubella Laboratory Network/Japanese Encephalitis (JE) Laboratory Network</li> <li>• Q&amp;A and discussion</li> </ul>     | 1530-1615<br><br>1615-1700 | <b>7. Advocacy for immunization</b> <ul style="list-style-type: none"> <li>• Regional Immunization Week (including other regions and one video presentation)</li> <li>• Papua New Guinea</li> <li>• Q&amp;A and discussion</li> </ul><br><b>Special session</b> <ul style="list-style-type: none"> <li>• Update on Global Immunization Vision and Strategy (GIVS) and Decade of Vaccines (DoV)</li> <li>• Update on Strategic Advisory Group of Experts (SAGE)</li> <li>• Q&amp;A and discussion</li> </ul>   |           |             |

WORLD HEALTH  
ORGANIZATION



ORGANISATION MONDIALE  
DE LA SANTE

REGIONAL OFFICE FOR THE WESTERN PACIFIC  
BUREAU REGIONAL DU PACIFIQUE OCCIDENTAL

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ENGLISH ONLY

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MANAGERS/SURVEILLANCE OFFICERS, MINISTRY/DEPARTMENT OF HEALTH  
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